June, 1992 - Volume 9 No 6

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The Australian COMMODORE & AMIGA Review

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Editorial

World of Commodore 1992, July 3-5 at Sydney's Darling Harbour, will see the launch of two important new Commodore products. Both are reviewed in this month's issue (thanks to Commodore for supplying us with advance evaluation machines) the Amiga 600 and A570 CD-ROM drive.

The products Commodore are launching are both very significant.

The new CD-ROM drive will, at the right price, see a massive increase in the use of CD as a delivery medium for entertainment and education titles. Apart from helping solve the piracy problem, this medium also makes porting applications originating on other platforms much simpler. Furthermore, it will help sell CDTV.

Without doubt, the addition of a CDTV compatible CD-ROM drive for the Amiga 500 is a good step in the right direction. Let's hope the A2000/3000 model follows soon.

Entry level computing is set to change for the better. Commodore have returned to their roots, providing an affordable, functional home computer which has both a price and performance edge over alternatives. The Amiga 600 with hard drive for around $1000 represents a powerful weapon against the MS-DOS clone onslaught. The entry level A600 at around $700 (less at street price) will see the super game console makers having to rethink, as Commodore starts to win back some of the low end market they've lost in Australia and the U.S.A.

The Amiga 600 is certainly an excellent machine for beginners. Amiga productivity software remains far more competitively priced than MS-DOS, whilst offering similar levels of performance. We continue to enjoy one of the most advanced, yet easy to use, operating systems and I'm sure Commodore have a few big surprises in store for all of us over the next twelve months.

Andrew Farrell

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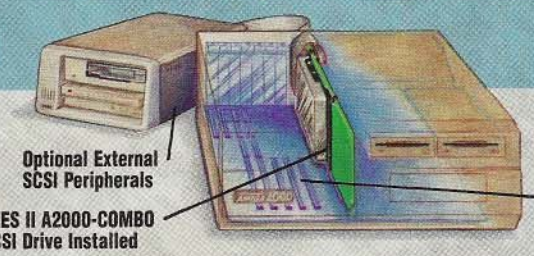

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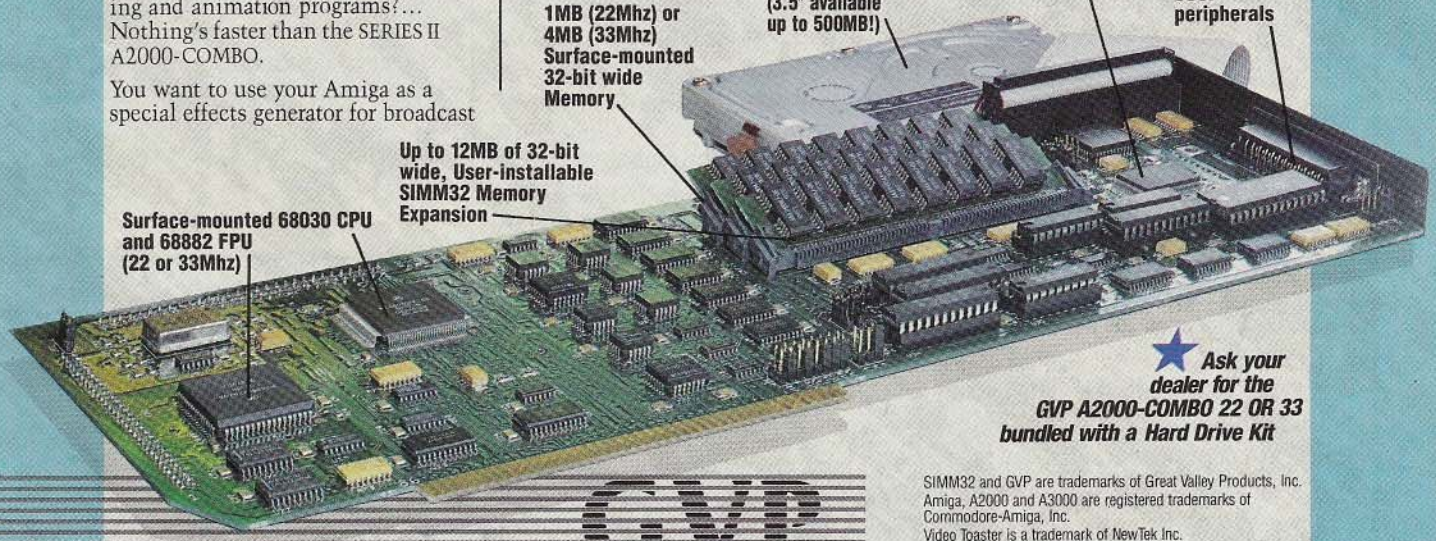

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UPDATE COLUMN

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Yes, EASY AMOS is now here. If you own an Amiga and only use it for playing purchased games or business or educational programmes, then you are undoubtedly missing out on some of the better things in life! With EASY AMOS, no matter how much of a novice you are you can write your own games, design your own educational programmes, and even write business applications to suit. Some of you, in the past, may not have purchased AMOS because you did not feel that you were computer literate enough to write your own programmes but now with EASY AMOS that worry does not exist - it really teaches you from the beginning and let me tell you that until you start to write your own programmes you don't know what true gratification is!

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Ram Rumbles

Brisbane User Group

A new Amiga group has been formed in the Brisbane metropolitan area. Meetings are held on the third Saturday afternoon of the month at 96 French Street, Coorparoo, Brisbane and slotted to start at 12.30 pm. Contact: Keith Antoine (President) (07) 300 2161 (home), or Roy Jacques (07) 207 8482 (home). The group is geared toward Amiga owners and semi-professional help is available. New members are welcome.

Bogus Amigas

A long document circulating in Bulletin Board Systems regarding the existence of an Amiga 600 (with 14.3Mhz 68000, 6Mb RAM), Amiga 2200 and Amiga Station is bogus! Apparently the message originated in the USA, where the tag line at the end of the posting was "Ah, Ah, Got You!". Somewhere along the line someone deleted the ending, and the document was echoed around the world within days. So much for electronic mail!

Media Spottings

Nuclear Physicists Use Amiga. It's a fact, nuclear physicists do use the Amiga. Mr Illert, a Wollongong mathematician and Amiga user, visiting scientist at the Institute of Basic Research in Palm Harbour, Florida has used his machine to help unravel more of the mysterious surrounding atoms. Graeme Watts spotted the newspaper article announcing the discovery in a Queensland newspaper. Rumour has it the program was not written in AmigaBasic.

Family Feud

Channel 7's Brisbane Family Fued offered a CDTV player as a bonus round prize according to Edwin Luck of Toowoomba. CDTV players have also turned up on *Sale of the Century* for as low as $6. *Double Dare* offered the Commodore 64 as a prize.

Citibank Use DiskMaster!

Many people have spotted the DiskMaster screen sitting in the Citibank commercial where a rather boring looking PC talks to the customer looking over the operator's shoulder. It's a quick glimpse which only the most eagle eyed spotters have reported. Thanks to all of you!

Commonwealth Bank Cup

It appear Commodore are one of the sponsers of South Sydney's rugby league club. Around the ground on April 11th, Commodore banners advertised the Amiga to all attending. Good one Commodore - better than cigarettes! Thanks to Stephen Foster of Gordon, ACT, for this and other sightings. Gordon notes that Amigas are also used heavily in the National Science and Technology Institute in Canberra.

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For more information contact Dataflow on (02) 310 2020. RRP is $229.95.

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These upgrades are handled directly by the USA. The upgrade costs for *Flow* are from Version 2.0 US$30.00, from Version 1.0 US$40.00. Customers should send one of their original disks along with payment to Upgrade Department, New Horizons Software Inc., PO Box 164260, Austin TX 78716 USA.

To upgrade *Quarterback* from Version 4.0 to 4.3 US$35.00, from Version 2.3 or earlier US$45.00. Customers should send one of their original disks along with payment to Upgrade Department, New Horizons Software Inc., PO Box 164287, Austin TX 78716 USA.

To upgrade *QuickWrite* for Version 1.1 is US$20.00. Features include automatic save; a 3D look; supports both versions 1.3 and 2.0 of Workbench; and Macro and AREXX enhancements have been added. Customers should send one of their original disks along with payment to Upgrade Department, New Horizons Software Inc., PO Box 43167, Austin TX 78745 USA.

All prices include shipping costs.

CanDo 1.6

Inovatronics has released version 1.6 of CanDo, adding gameport support, proportional sliders, HEX file i/o, better Help and AREXX support. The upgrade to 1.6 is free and automatic for owners of CanDo 1.5 who are already registered, or who registered prior to March 31, 1992. Owners of version 1.5 who register after March 31st, 1992 can receive the upgrade for US$10.00 plus US$2.00 shipping and handling. Owners of versions prior to version 1.5 may upgrade to version 1.6 for US$40.00 until March 31st, 1992. Contact Desktop Utilities.

CD+G Titles Arrive!

Digital Imports Australia now have available CD+G (Graphics and Lyrics) for use with CDTV. Over 35 compact discs are encoded with the + Graphics technology. Digital Imports Australia are also currently sourcing CD+Midi (Digital encoded score) which will be available soon.

Some of their CD+Graphics titles include Jimi Hendrix "Smash Hits", Gustav Holst "The Planets" (which is the best so far), Fleetwood Mac "Behind the Mask" & Little Feat "Representing the Mambo".

Any enquiries may be forwarded to Digital Imports Australia, 183 Palm Beach Drive, Patterson Lakes, Vic 3197, telephone (03) 776 0743.

HotLinks - Text and Photo Editing for Pagestream 2.2

Hot on the heels of *Professional Page*, *PageStream 2.2* is now offering hot links to its own proprietary text editing and image manipulation software. *HotLinks* includes: a resident program, a library, BME (BitMap editor), and PageLiner (text editor). The package focuses on exchanging actual data between these programs and *HotLinks* compatible programs such as *PageStream*, allowing users to edit data in one program, and to be recognised by another program.

PageStream owners will greatly benefit from *HotLinks*. Like Apple Mac's publish facility, *HotLinks* will notify *PageStream* that a user's file has been changed and automatically replace the older data with the updated changes. This communication link will make multitasking even easier.

BME is the bitmap editing program designed specifically for *PageStream 2.2* and *HotLinks*. BME can edit pictures two ways, either importing IFF ILBM and GIF files directly or importing any bitmap graphic format into *PageStream* and subscribing (importing) it into BME via *HotLinks*. This allows *PageStream* users the flexibility of editing any type of bitmap graphic format they wish and is not exclusive to just IFF or GIF formats. BME edits any bitmap graphics with cut, copy, paste, fill and crop.

Users touch up graphics by painting with various paint brushes, or picking any colour or portion in the existing graphic to use as a brush or eyedropper tool. BME edits colour pictures by representing it with 15 gray shades. Colour pictures will maintain and edit in their full range of available colours, even if

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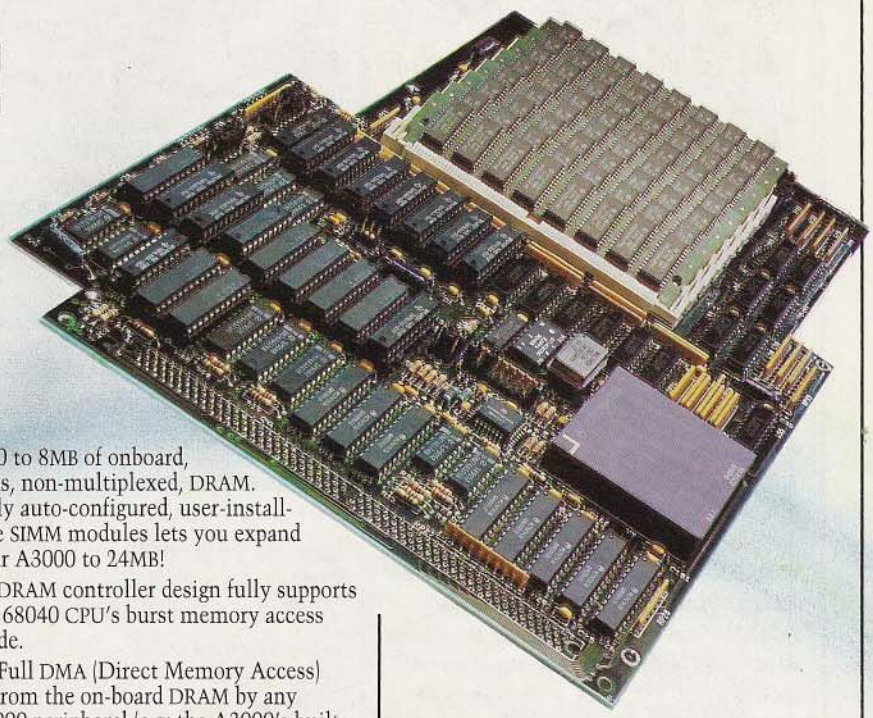

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The A3000 was designed to work with low-cost, 80ns DRAM (memory) technology. As a result, anytime the '040 CPU accesses the A3000 motherboard, memory lots of CPU *wait-states* are introduced and all the reasons you bought your accelerator literally come to a screeching halt!

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▶ Asynchronous design allows the 68040 to run at clock speeds independent of the A3000 motherboard speed. Allows easy upgrade to 33Mhz 68040 (over 25.3 MIPS!) when available from Motorola.

▶ Hardware support for allowing V2.0 Kickstart ROM to be copied into and mirrored by the high performance on-board DRAM. Its like caching the entire operating system!

▶ Software switchable 68030 "fallback" mode for full backward compatibility with the A3000's native 68030 CPU.

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3.5" Ext Floppy Drive	$145
DCTV-PAL	$950
A500 0.5Mb exp	$70
AT-ONCE PLUS 286-16 EMULATOR	$460
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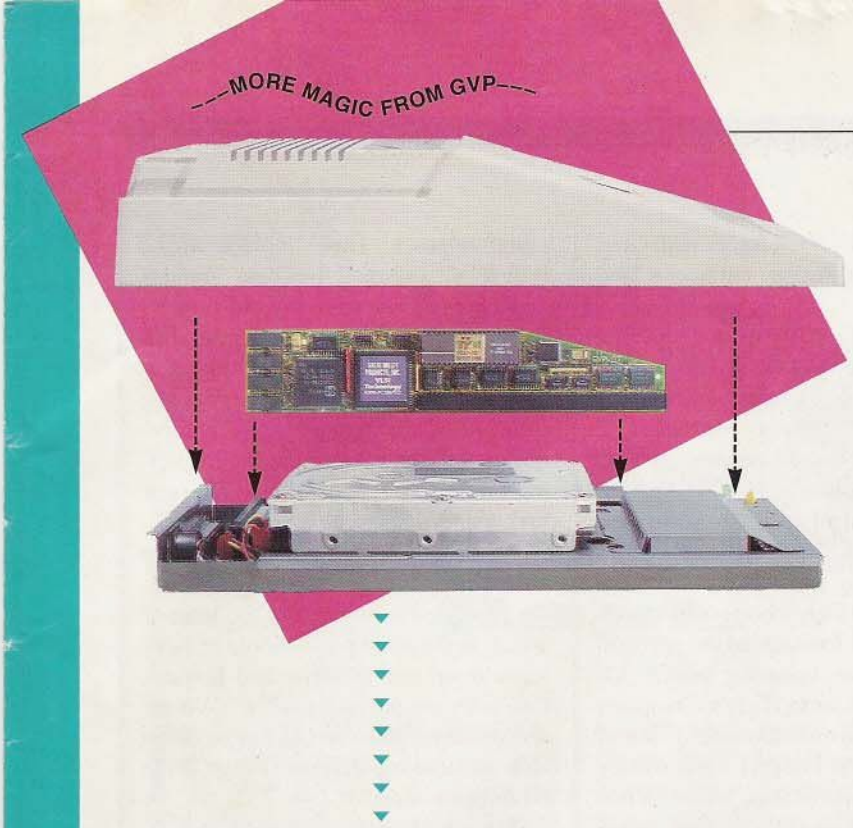
Rush Software Launches Education Range

While Apple Computers have a large share of the Australian school market, some schools have been looking for an affordable alternative for their aging Apple IIe computers.

The Commodore Amiga computer was accepted onto the schools' contract list two years ago and is now gaining increasing popularity. From a software perspective there is a good range of application software to choose from with wordprocessing, database, spreadsheet and communications being well represented. In particular graphics, music and video titling packages are a major strength for the Amiga.

Unfortunately Australian educational packages are not abundant, most having an American influence.

Enter Rush Software, a new Australian based company currently writing educational and custom software for the Amiga. Rush Software started writing software eight months ago for the Amiga, after Martin Fitzgibbons, a NSW High



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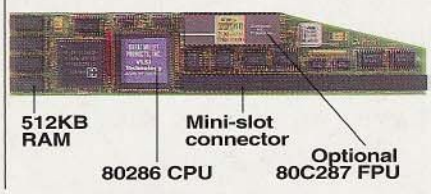

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School teacher, joined forces with Greg Abernethy, an Amiga enthusiast and programmer.

Rush's first release was *Convicts of the First Fleet* database, a popular package on many other platforms. This was followed by *Teachers' Markbook,* a program that was desperately needed by many schools.

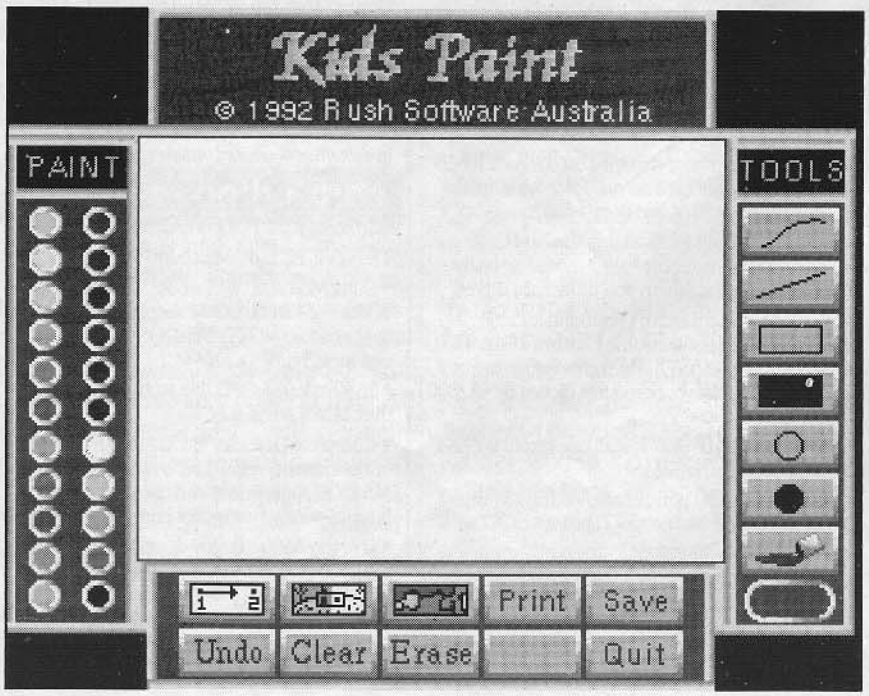
A key element to Rush Software's future success is its pricing policy. After talking to many teachers and from experiences at Mr Fitzgibbon's own school, Rush Software has tackled the problem of sensible site licensing prices. Mr Fitzgibbons (Kiama High's Computer Coordinator) is only too well aware of schools' limited budgets versus hefty lab pack and site licence prices. While schools try to give students the latest in computer education they often have to pass up an excellent piece of software or break the copyright laws. Rush Software offers site licenses ranging from $65 to $190. This gives schools the right to make unlimited copies for use in their school.

Rush has now turned its attention to primary school needs with several exciting releases. These include *Milky Way Cafe* (a small business simulation), *Kids Write* (junior word-processor), *Kids Paint* (junior paint program), *Endless Stories* (creative writing program), *Amitute* (tutorial for the Amiga), *Blowout* (mathematical problem solving) and *Cosmic Alphabet* (junior typing tutor) and *Teachers' Test Kit* (test maker and marking).

Mr Fitzgibbons points out that there are many advantages to buying Australian produced software, not the least of which is the ability of schools to have some input into the style and features that software packages offer. "We are always looking to improve our products and are looking for new ideas," Mr Fitzgibbons said.

Schools can register with Rush Software to receive a free catalogue of their current releases and this will ensure they also hear about the exciting new releases planned for term two this year, these include *Kids Base* (junior database) and *Kids Comm* (a telecommunication simulator). Just write to Rush Software, 149 Stafford St, Gerroa NSW 2534.

Kids Paint - A new paint program designed just for kids by Rush Software



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Commodore's Clone Killer

Review : Amiga 600

At next month's World of Commodore Show, the Amiga 600 will be launched. At around $1000 complete with a built-in hard drive, we've tagged this new machine as Commodore's clone killer. Andrew Farrell explains.

Commodore sold over 10 million Commodore 64's, truly a gigantic success story. Today, the home computer market has become blurred as many buyers have opted for MS-DOS compatible machines, or stepped down to game consoles. Of the original 10 million C64 owners, only three million have upgraded to the Amiga. The Amiga 600 may be set to change that for good.

Previewed earlier this year at the CeBit computer fair in Germany, news of the A600 spread quickly, enabling us to bring you a preview in last month's edition. The A600 is the same machine as the rumoured A300, although it appears it will not initially be targeted at the game console market.

Essentially, it's an A500 with some useful additions and deletions. The A500's expansion port is gone, memory expansion slots are changed, the chip sockets and numeric keypad are gone, an RF modulator is added along with a new credit card style slot.

The machine will ship in two configurations, the straight A600 will go for around $700, whilst the A600HD will sell for about $1000.

First Impressions

Mounted in an attractive cream case, which is considerably more compact than the A500, the A600 is a smart looking unit with a very solid feel about it. There is no numeric keypad and the cursor arrows have been integrated into the main collection of keys. Three LEDs at the lower right of the keyboard indicate power, floppy and hard disk activity. The mouse and joystick connectors have been relocated to a more sensible position at the right side of the console. Overall, the 600 is a very pleasing design.

Workbench 2.05 is included, with a new soft cover cover manual containing much the same as the current ring binder shipping with the 2.04 upgrade. The new version contains a few bug fixes - some of which are included in the new Setpatch command. A smaller booklet provides a useful guide to computing terms and step by step instructions on setting up the machine. All the various ports and sockets are also explained. A well thought out publication which will be much appreciated by beginners.

Hardware

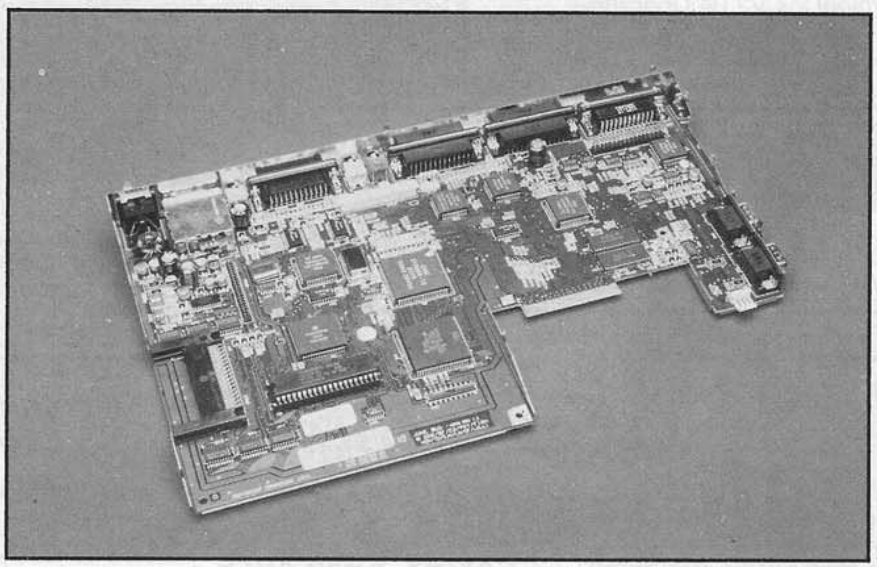
Inside the new case, the A600 has the usual 3.5 inch 880k floppy drive, however it uses a newer low profile drive mechanism. Our test unit contained one megabyte of CHIP RAM, which is expandable using the trap door underneath the console. A smaller light weight power supply is now used, thanks to the limited expansion of the A600 and use of DRAM technology.

Commodore have made extensive use of surface mounted technology, meaning most of the chips are soldered directly to the printed circuit board. Although this means lower cost and higher reliability, repairs will be more complex and third party add ons will have to use one of the proper expansion ports - which is probably a good thing.

Kickstart is the only socketed chip, however internal space is very limited, so there may not be room for current Kickstart switching boards.

Several new connectors have been added; colour composite video and an RF out are now built in. Standard RCA jacks are provided for each of these outputs. This is great news for game players wishing to connect directly to a television. If you have a VCR you can connect the colour composite direct to

A600 motherboard



the video in. In this way you may then record directly from the A600, or switch your VCR so that you may see the output on your television - which should be better quality than the RF signal.

Commodore have not improved on the speed of the CPU, which remains a 68000 running at 7.09Mhz. Disappointing, especially considering that the 68020's now sell for around the same price as the 68000 - although Commodore are no doubt sitting on a stock pile of 68000's or are tied into a supply contract. I can see no way the CPU could be upgraded by a third party add on, so the A600 is somewhat limited in this area.

Like the Amiga 500Plus, the current versions of Agnus and Denise are included, providing complete Workbench 2.0x functionality.

Software support for the new hi-resolution display modes remains scant, however we can look forward to vast improvements in the areas of video titling, CAD and desktop publishing work.

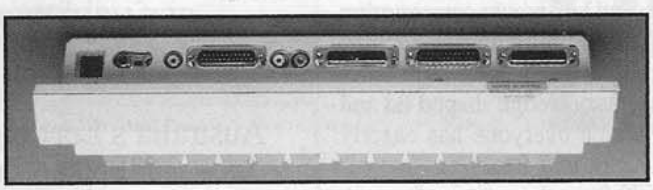
Credit Card Connector

Without doubt the most exciting inclusion in the A600, however one which will not be realised for some time, is a credit card sized slot on the left side of the unit. It is compatible with the PCMCIA/JEIDA standard for "Memory Card" devices. The PCMCIA connector supports credit card sized memory/IO cards that are variously referred to as Memory Cards and PC Cards. The sixty-eight pin standard seems to be the most popular at this time. This connector is intended mainly for ROM cards, SRAM cards, and Flash ROM cards.

Game and application programmers can design software which runs from PCMCIA standard ROM cards which can be mastered and produced by a number of firms. There will be Amiga specific cards, and also industry standard cards.

Amiga specific cards would be for instance, "execute in place" ROM cards for games. Industry standard cards would mean that an A600, with an appropriate software driver (such as CrossDOS - included with Workbench 2.1), would be able to read PC-format cards and exchange data with for instance, an HP95Xl Palmtop computer with an SRAM card.

In the future we may see 20 Megabyte RAM cards which work much like a hard drive, only they're much faster and you can easily remove them for safe keeping or transfer to another machine. Current predictions estimate that such cards will replace hard drives within 2-3 years, in which case the A600 is ready to rock and roll with the new technology. Well done Commodore!



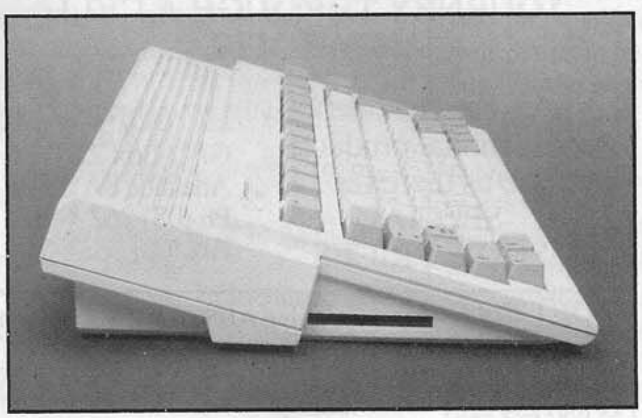
Expansion

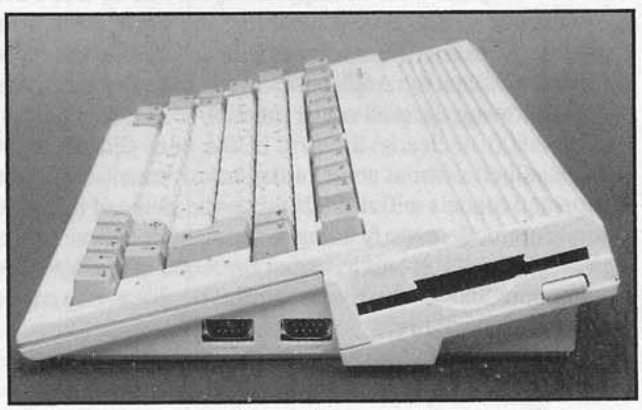
Replacing the A500's trap-door connector is a new A601 edge connector, which is an improvement on the current awkward socket. Up to two megabytes of chip RAM and a battery backed clock may be added by means of a small add-in card called the A601.

Internally there's a mount for one 2.5 inch hard drive. The interface and mounting bracket are suitable for a variety of small 2.5 inch low power hard drives, currently used in laptop computers, from suppliers such as Connor and Quantum.

The A600HD system will ship with a version of the Kickstart ROM which includes an IDB disk device driver. Addition of an IDB drive to the non-HD systems would require an upgrade kit including a new Kickstart ROM, or a RAM based device driver.

In order to add these new capabilities to the A600, a new generation GARY (sys-





tem interface and glue) chip has been designed. The new GARY, called GAYLE, still performs the basic functions included in the original GARY (such as chip selects and miscellaneous control signals), but it now includes a complete hardware implementation for the PCMCIA/JEIDA for the Amiga, and includes a series of special purpose registers for this interface. GAYLE also includes the decoding of the address for the IDB interface.

I look forward to testing the drive speed out in the future - unfortunately we couldn't get our hands on a drive and the right driver for this review.

Conclusions

With the latest operating system, chipset, operating manuals and improved potential for future expansion technology, the A600 is a very smart entry level Amiga.

Laptop style hard drives suitable for this machine are growing in capacity; although they remain a little on the expensive side, it sounds as if Commodore will have an affordable upgrade path.

It will be very interesting to see what turns up for the credit card expansion slot - there is incredible potential in this area. There's talk of everything from fax/modems to RAM drives.

I believe Commodore now have the machine needed to tackle the game consoles head on. However, they will have to wait until there are some cartridge based games for the A600. Given the strength of the European market, they will no doubt be forthcoming in good time.

As for the mid-range market, where people are buying home computers and making educated decisions about their needs, the A600HD will offer very good value for money. It's an attractive device, which will perform well against machines nearly twice the price. There is of course the remaining short fall in the lack of a high resolution mode which can display a useful number of colours and compete happily with SVGA.

Interestingly, the rigid design and low power consumption may well lend itself to seeing the A600 being further adapted as a portable Amiga. Add the right battery pack and colour LCD display, create a complementary wedge shaped lid and you have the Amiga portable which everyone has eagerly awaited. The A600 is the right shape and size.

I was impressed with the A600 from the moment I saw it. I'm sure many other new computer buyers will be too. Once the computer stores start discounting the price, there's no saying how many Commodore will sell. With the right economic climate, the A600 has the potential to become a big seller, following the path of the much-loved C64.

The A600 is clearly the first of the next generation of Amigas, albeit without some of the improvements in power the top end models will need. If this is the shape of things to come, Commodore are heading in the right direction.

You can look forward to seeing the A600 at the World of Commodore Show, where you may also be able to buy one of the first in the country.

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Now many more external Ram Expansions will work with all Action Replay III commands.

- **DISKCODER**
With the new "Diskcoder" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. "Tagged" disks will only reload when you enter the code. Very useful for security.

NEW **SET MAP -**
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World of Commodore Amiga, 1992 Show Preview

Andrew Farrell reports on some of the exhibitors. For an in depth view see our July issue.

With the 1991 show safely tucked away as a giant success, Commodore may confidently expect at least the same 30,000 people to come marching through this year. If the organisers have their way, that number will be several times higher, which should do much to keep the growing number of exhibitors happy.

If you stroll into Sydney's Darling Harbour between July 3-5, you'll probably notice a large number of bleary eyed Amigans hurrying into the exhibition halls. Inside, the queues will be filled with *Australian Commodore and Amiga Review* readers, clutching the following guide and preparing to make a bee line for any one of several new Amiga add-ons which will be demonstrated for the first time.

Commodore

Through the front gates, the world of Commodore's Amiga and a few PC's - there might even be a C64 or two! Staring down the centre isle, the proverbial yellow brick road will take you directly to the Castle of Commodore at the very back of the hall. Here you'll find different market environments encapsulated into small areas, each one demonstrating how Commodore products are used by different people.

At the centre of the exhibit a 3 x 3 video wall will stand behind a stage area. At different times exhibitors and invited guests will give demonstrations and be interviewed. However, you'll probably be distracted enough to make the Commodore stand last on your itinerary.

Mindscape

At front of house, Mindscape and Opal Technology will be strutting their stuff. With the same monolothic stand as last year, featuring imitation marble pillars and rag wash walls, the Miracle Keyboard will pump MIDI music sequenced by Mindscapes newly acquired Blue Ribbon Software Bakery product, *Bars and Pipes*. A new version adapted for the keyboard will be available, along with various other Blue Ribbon add-ons. This stand will be a must for music buffs.

Mindscape will also have a games gallery, A570 CD-ROM drive with titles from Rainbow Arts, and CD-ROM running on the Commodore PC. Mindscape are looking forward to increased sales of CDTV applications once the A570 CD-ROM drive starts shipping - watch for A570s all over the place, they should be available for sale.

Opal Technology

Right next to Mindscape, Gary Rayner and his development team will be busy showing off Opal Technology's first big product - *Opal Vision* and *Opal Paint*. An outstanding 24-bit paint package, with a lot more in the pipeline, if you're involved with video production, animation or just crave to see what real paint box style software looks like, be sure to check out this display.

Phoenix

Another local developer, Phoenix will have a host of small new Amiga add-ons including a colour digitiser and splitter, SCSI Box and an analogue joystick adaptor. For Amiga 1000 owners, see the latest Phoenix motherboard complete with 2Mb of Chip RAM. The Phoenix will feature a display crated using Aladdin, a special controller which drives theatre lights and dimmer racks. The package also offers Special FX and is ideal for Discos. Software control is available through an AREXX port and MIDI.

Hard Disk Cafe

One of the most popular Amiga stores in Australia. The whole Hard Disk Cafe team will be in action, demonstrating all the latest Amiga gear and they promise a few good show bargains will be available. If you're looking for good advice from real Amiga enthusiasts in the business, you can't go past these guys! Chris Dunbar, ex-Commodore User Group manager, has recently joined up with Karen and Neil.

GVP

With many of the Amiga's original developers now working at Greater Valley Products, this company continues to churn out some of the most impressive Amiga add-ons around. Apart from their amazing range of accelerator cards for the A2000, GVP should have a new 030 accerator for the A500 and the latest versions of their popular Combo card.

For videophiles and animators, GVP will be showing off a new 8/24-bit board which is said to run animation, and is able to run many applications in a high resolution mode of 1024 x 1024. At the recent New York show, the latest version of *ProWrite* was demonstrated working in 256 colour mode! Don't miss this stand!

Scala Inc.

Since its launch, *Scala* has quickly opened up a new market for the Amiga in the area of presentation graphics. Version 2.0 of *Scala* will be on display, along with several new low end version suitable for video titling. The latest upgrade adds many new transitions and extends support for sound and Soundtracker modules. Animations will now play direct from hard disk! Support for 24-bit displays has not been added yet, however rumour has it that they're working on it.

GSoft

Another local developer. GSoft have built a strong range of products over the past year. At the show you can see the new Amiga answering machine add-on which provides typical answering machine functionality along with the potential for interactive calls using tones or voice control. GSoft plan to develop the product much further, with an internal A2000 version planned. Also see Audio Engineer, TurboPrint Professional, Floptical Drive Storage and the newly launched *Australian Amiga Disk Magazine.*

Australian Commodore and Amiga Review

Meet the editorial team, catch up on the latest news, buy a back issue or two, or *Amiga Annual* or the latest *Professional Amiga User* magazine. You can also see some of the latest in Amiga animation and pick up any of the popular Prime Artifax public domain disks. The entire Fred Fish collection will also be available on an "order now, pick up on your way out" basis.

User Groups

At least ten Amiga User Groups from around Australia will be at the show, seeking members, selling PD and generally letting everyone know they exist. If you're looking for somewhere to meet other like minded Amigans and exchange tips, then be sure to check at one of these stands.

CPA

Specialising in professional video solutions, CPA will be demonstrating corporate quality video production and stop frame animation using their own locally developed software.

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Left Side Software

Jonathan Potter, author of the popular Directory Opus file management utility, will be launching the latest version of his program. The updated program includes enhanced Workbench 2.0x support, unlimited banks of custom gadgets - allowing an endless number of user defined functions to be added to the program, multi-command gadgets, enhanced IFF viewer and custom requesters. The ARP library is no longer required, and the whole program is smaller. Version 3.5 will sell for a special show price of $59.95.

SoftLogic

With *PageStream 2.2* and *Hot Links* now shipping, SoftLogic have a powerful desktop publishing solution for the Amiga. *PageStream* boasts the ability to import a vast range of file types and with the addition of *Hot Links*, provides file publishing functionality similar to the Apple Mac. A direct link to image and text editing software is now supported. SoftLogic also supply an excellent range of fonts and clip art including hundreds of Adobe Type 1 fonts.

GP-Software

At this year's show, GP-Software will be selling and demonstrating the fax software which was still under development last year. GP-FAX is a top class fax program which is currently bundled with Maestro and Supra modems and will soon be adapted to work with other models. Features include schedules transmitting, full AREXX control and automatic DATA/FAX detection with control handed over to an AREXX compatible terminal program.

MegaDisc

Australia's premiere disk magazine, and the man who made it all come together - Tim Strachan, will be on display again this year with the 28th Megadisc, lots of PD theme packs, back issues and of course you can place orders for any of their huge range of PD disks.

On the same stand you can catch up with Jonathan Potter of Left Side Software. Jonathan authored the brilliant directory utlity Dir Opus. He also has a fine range of PD programs.

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AX-RAM Four - A500 Memory Expansion

There are dozens of ways to add memory to your Amiga 500. Daniel Rutter examines a local solution which offers a little more than most.

AX-RAM's main selling points are that it fits in the standard A500 trapdoor expansion slot and allows the use of one or two megabytes of chip RAM. For this you need a one or two megabyte Agnus chip; Ax-Ram won't work with the old 512K version. The board can be populated to a maximum of four megabytes, or to only two. It includes a battery backed clock.

Installation requires your Gary chip to be unplugged and remounted on a daughterboard which plugs into the Gary socket and is wired to the main board, which plugs in just like the stock A501.

You will also need to cut or change some jumpers on your motherboard (the main circuit board inside the A500), depending on your configuration. All this is well explained with a flow chart to make it easier to understand. A technician will have it done in minutes; if you want to do it yourself you will need a soldering iron and a hobby knife.

On the downside, up to 1.75 megabytes of your memory, depending on configuration, will not be autoconfig. A small program called Addmem, included, will need to be run with appropriate arguments in your startup-sequence to make this memory available to the computer. This extra RAM may also clash with a few programs, particularly games, but can be disabled by a switch or software. In general, it is pretty well behaved, and didn't conflict with the extra RAM I already had in my SCRAM 500 expansion.

The review unit we received had some definite faults - one of the cables was intermittent, taking this reviewer off on Magical Mystery Tours of Guru Island at inopportune moments. Also, the RAM disable switch appeared to disable some other minor things, like the CPU - I eventually just unplugged it. On top of that, the clock had a burning urge to tell me it was 1921, and refused to listen to reason. It ran fast, then slow, then away. I gave up on that, too. The manufacturers have assured me that these faults are not in any way normal and that something unpleasant must have happened in transit; I am a trusting soul and will believe them.

Conclusions

On the whole, the Ax-Ram is good but not great; mine was disastrous. You will get quite acceptable value for money if you specifically need something that won't tie up your side expansion port, and if you specifically need lots of chip RAM. Otherwise, think twice.

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CDTV Hardware Review

A-570 CD-ROM DRIVE

by Phil Campbell

Chaos-Theory scientists say tiny changes can have dramatic effects. The flap of a butterfly's wing in China, they say, can eventually produce a hurricane in Tasmania.

I'm almost sure I heard the flapping of tiny wings as I opened the carton around Commodore's new A-570 CD-ROM drive. In simple terms, it's a stripped down CDTV. Simply plug it into a standard Amiga 500, and you're ready to go.

The unit is compact, a low-line cream coloured affair that slots into the Amiga's side expansion port. My Amiga has discoloured a little with age, so the colours don't quite match - but the decorative slots along the top of both units co-ordinate perfectly. The drive is a little wider than the A-590 Hard Drive, though not much bulkier.

The front panel is vertical, and doesn't imitate the raked effect of the keyboard, but the overall effect is neat. On the front panel you'll find a headphone socket, a volume control knob, and the CD slot. Like most CD-ROM drives, a disk caddy is required.

There are four audio sockets on the back of the unit. Standard Amiga sound feeds into one pair of RCA sockets. This signal is then mixed with the CD-Audio, matching the specifications of the original CDTV - in other words, sound effects from the Amiga will blend perfectly with music and voice tracks from the compact disc.

An external power supply is provided. It looks exactly like the standard A-500 cream coloured brick, and has a power switch on the front. Obviously, both units must be powered up, so you'll have an extra switch to flick before you can get going.

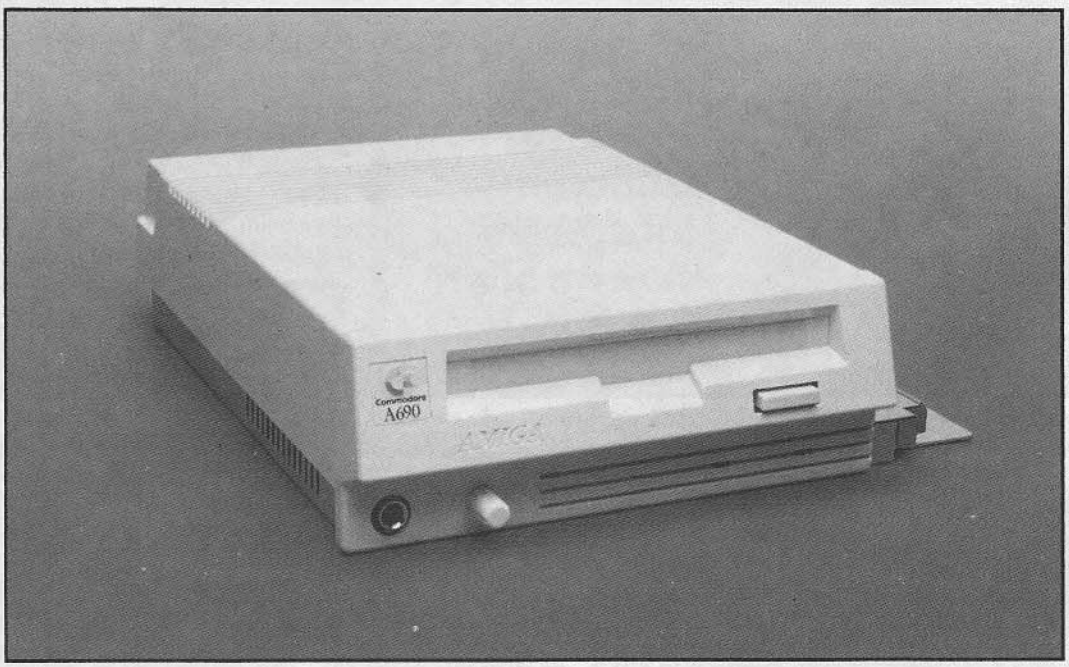
Otherwise, though, getting started is simple.

If there's a bootable disk in your internal floppy drive when you switch on, it's Amiga business as usual. Your system will recognise the CD unit as an extra drive with around 650 megabytes of read-only storage.

The system comes with a disk containing every program in Fred Fish's famous public domain software collection. It blends seamlessly into the Amiga's Workbench operating system - you can access any program from the original 490 "Fish disks" with three or four clicks on your mouse.

Leave out the boot disk, though, and the system will automatically move into CDTV mode, complete with the always impressive startup screen featuring the

The Commodore A570 CD ROM drive, previously known as the A690



sparkly CD and rotating logo. Push in a CDTV software title in the caddy, and off you go - everything works exactly like a fully fledged CDTV machine.

To check out the unit's compatibility, I ran *The Heroic Age of Space Flight*, the first CDTV title to feature Commodore's CD-XL data compression format to produce 10 frame per second full motion video. Believe it or not, the disc features a 50 minute movie - *NASA ... The 25th Year* - as well as piles of interesting facts and figures. It worked beautifully.

My kids tried the CDTV version of *Lemmings*, with no apparent problems. In fact, playing with the mouse is easier than using the original infra-red remote controller.

In some cases, it's a little awkward - if the software was designed to run only with the remote control "joypad", then mouse or joystick movements may not be quite what you're expecting. In *Barney Bear Goes Back to School*, for example, selecting options with the mouse was a bit of a hit and miss affair. And in *Falcon*, a superb flight simulator that originated on the Amiga, it seems that mouse control is the only option - I'd rather use the joystick.

The only other complaint is that there's no pass-through connection for a hard drive. If your current hard disk doesn't have one, then you've got real problems - of course, you can always do the plug-and-unplug-shuffle every time you want to swap over, but I wouldn't recommend it. The drive does feature a built in SCSI interface, which means you can plug in all sorts of other hard drives, tape drives and stuff, but that's small comfort if you've just invested in an A590 hard drive.

One final point. You'll need one megabyte of chip ram to run the unit - if you've got an ancient A500 without a "Fat Agnus" chip, then you're out of luck.

These, however, are minor quibbles. Because the humble looking A-570 drive is about to launch a revolution.

The CDTV has always had the potential to turn the world of entertainment and educational software on its ear. So far, the potential hasn't been fulfilled. But now it will be.

The A-570 promises to be extremely affordable - so affordable, that I'm willing to predict that one day, there will be one squatting beside every Amiga 500 in the world. And that means there'll soon be a hurricane of software with full motion video, stereo sound, and swags of space for data storage. The butterfly has flapped its wings - so batten down the hatches.

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This is good news, not just for Commodore. As a result of an ever expanding user base, more developers in both software and hardware see that Amiga is here to stay and therefore commit to provide better software and hardware to the benefit of Amiga and all users.

Amiga graphics and multitasking capabilities are just part of the reason for this growth. The real reason is that it is the easiest and most adaptable Computer around. Amiga has found its way into just about all areas of human applications, research, education, science, video, music, animation, business, desktop publishing, art etc etc. The list goes on.

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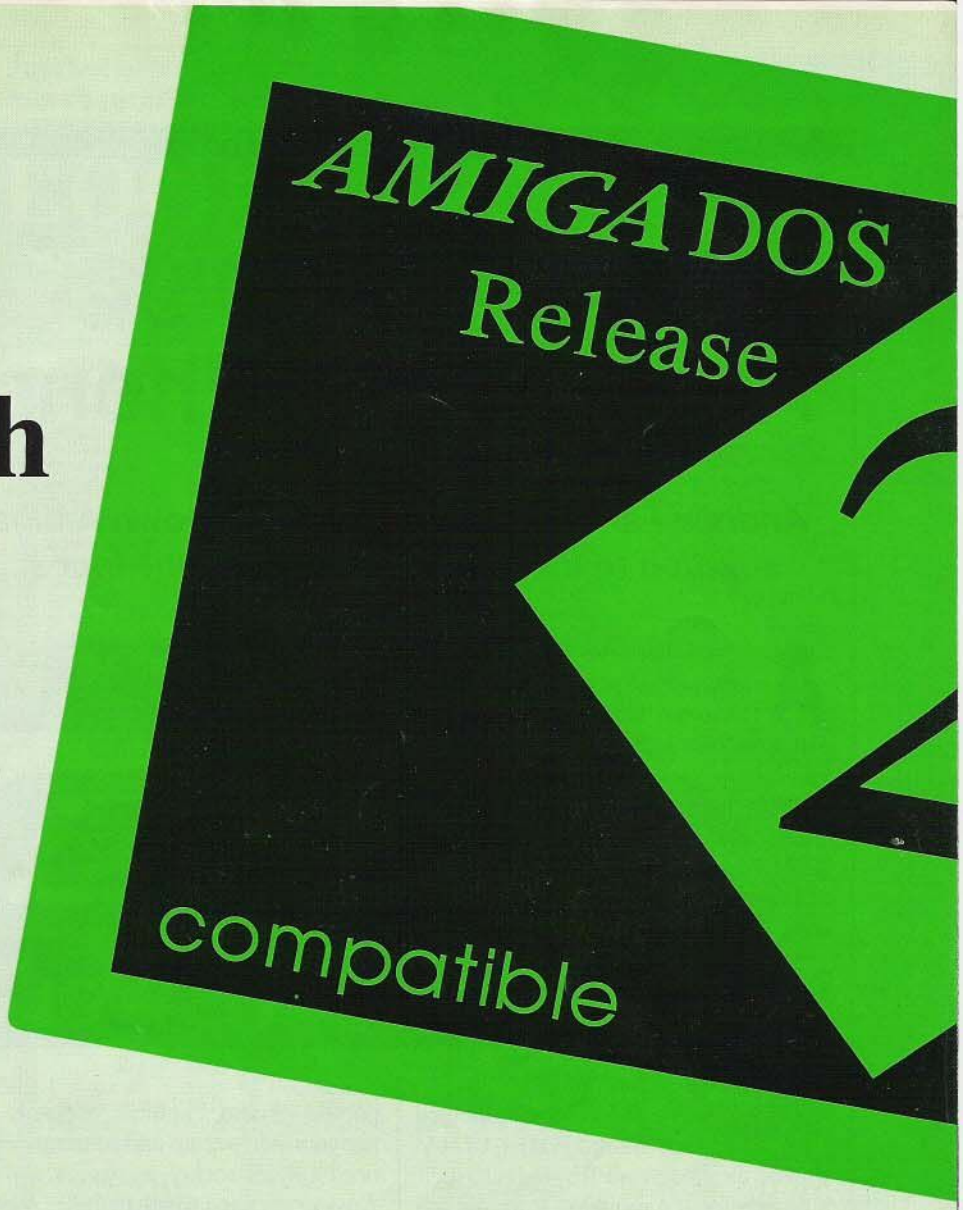

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This major upgrade is the result of intensive efforts by Commodore to bring the Amiga operating system to a new level of functionality. WB 2.0 offers profound improvements in stability and flexibility while retaining the combination of power and ease of use that are the hallmark of Amiga.

Demand for WB 2.0 will be very high as most Amiga owners, following in the WB 1.2 to WB 1.3 upgrade tradition, are now looking forward to WB 2.0. In Australia and NZ there are over 200,000 Amigas. Place your order now to avoid lengthy delays and enjoy the transformation of Amiga soon!

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Now My Amiga Answers the Phone

Andrew Farrell examines a home grown Amiga solution to those answering machine blues.

Are you tired of lost messages, tangled tapes and kludgy recordings? Can't find that one vital phone message buried beneath hours of engaged tones? The Answer, a new Australian Amiga telephone answering machine, could be the answer.

Yes, it wasn't so long ago we used to dream about the time the personal computer would become the centre of home entertainment, pumping video, music and computer images into the lounge room. Whilst CDTV may be the closest we'll ever get to such a device for the moment, it seems the cause has divided.

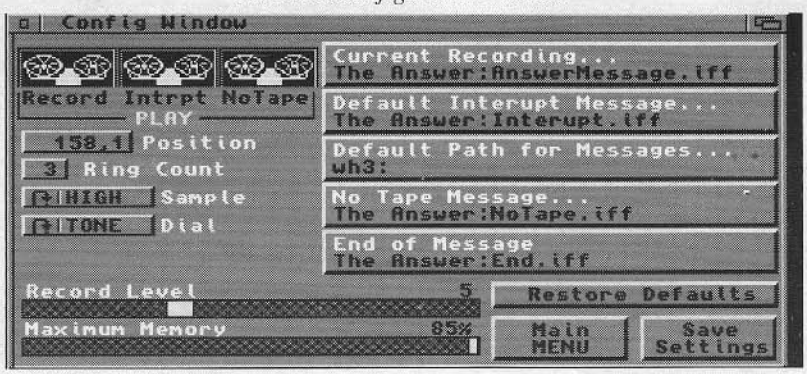
With the latest in Amiga add ons, it now seems the home computer looks set to stay comfortably seated in the study as the complete home office. I now have both my facsimile and answering machine on computer. The old stand alone models have been replaced by more efficient, more flexible alternatives which are also considerably cheaper, especially in the case of the fax (reviewed next month).

What You Need

The Answer is the brain child of Steve Weymss of GSoft Australia - the same man who brought us Audio Imager, the hardware side of the popular Audio Engineer package. To get your Answer up and running you'll need a phone socket, an Amiga, and the Answer package which includes a small grey box, software and manual.

The small grey box connects to your serial port, the telephone socket and you'll need an RCA cable to connect it to your sound sampler. Installing the software is a little easier. You can run it directly from floppy disk, however I would recommend it be used with a hard drive as sound samples have a nasty habit of taking up large amounts of space. To put The Answer software where you want it, just drag all the relevant icons into a new drawer.

The main configuration window



Preparing A Message or Two

Next up, the software needs to be configured to your particular taste. It's best to start by digging up your digitising software and sampling in four short messages to match those mentioned in the manual; an answer, interrupt, no tape and end of message sample. These four messages can be placed anywhere on your system.

Don't forget to include a beep sound of some sort at the end of your answer message as the software doesn't provide one for you. In fact, it would have been a smart inclusion to have a choice of several sounds to be used as an indicator for the caller to start leaving a message.

Once you've got all your samples sorted out, and set a path to where you want callers' messages to be stored, you're ready to go.

Operation

For now, the Amiga answers the phone, plays a sample to the caller, who then proceeds to leave a message which is digitised, named and date stamped. When the caller stops speaking, a "thanks for leaving a message" sample plays.

The advantage over a traditional systems is in recalling your messages. You have random access to all the sampled messages, and can delete or listen to any message. You may even choose to keep a message on file.

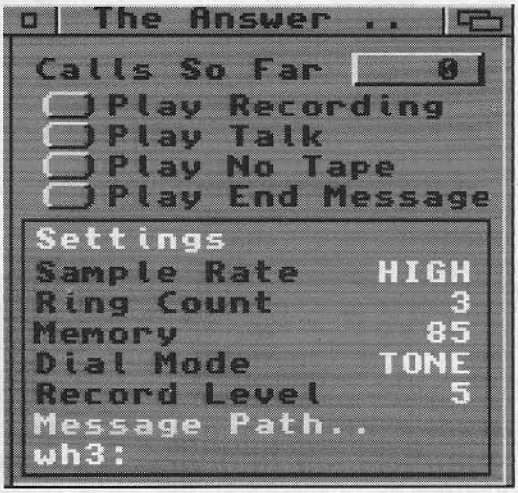
Each message is stored in standard IFF sound format, so you can use them for other

devious things. For example, you could cut, slice and paste together a whole new message from what someone had to say and play it back to another friend's machine who in turn ... no, that just wouldn't be right.

Bells and Whistles

Like any normal answering machine, you can monitor calls, and if you like, you can pick up the handset at any time. When you decide to interrupt a caller, you click on an appropriate gadget and a short message will play to notify the caller that you're in town. You may also record a phone conversation, although it should be noted that this is illegal without the other party's permission.

At around $149, The Answer is about the price of a cheap answering machine, with a bit more flexibility and a lot more potential. In the future GSoft plan on adding many additional features.



Check out the samples from here

Even the current release would allow you to create interactive calls, where the caller may select to hear different recorded messages using a YES response or silence. These messages could form an information service like many of the existing 0055 numbers.

The main interface is written in CanDo, so you can easily create your own or pay $25 for the unbound deck and modify the existing version. The software engine which speaks to the hardware is a separate program which includes an AREXX interface, so all sorts of other possiblities are open.

The Answer is good value for money, and I'm sure once GSoft have finished tweaking the software, will represent an excellent investment for any home or small business. No doubt a complete voice mail system could be developed given time. For more information call GSoft on (08) 254 2261.

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Using Deluxe Paint

Part 1 : Stencils

by Graham Bowden

Dear and gentle readers do you know what I believe? I believe there's a little artist in everyone. Sometimes just a little slop-it-and-see Pro Hart and other times a draw-it-and-drool Pickering. Woe is me, my own personal diminutive dauber has difficulty colouring in after he's joined the dots. What a breath of fresh air to be able to dip the mouse's tail in the electronic palette and find that where Pro creates, so do I. Well, you know what I mean.

Deluxe Paint, they say, was the program that sold a computer. Here was this state of the art electronic painting software and a brand new platform to operate it. Neophytes came, saw and were conquered. Amiga sales grew and magazines began sprouting dedicated art sections presenting to the world the progeny which resulted from the intercourse between artist, *DPaint* and the Amiga ... the eternal triangle.

Enough already. Who writes this stuff anyway? The question is, do you get enough out of it or are you still suffering frustrations? With *Deluxe Paint* you fool! Need help? Good, read this then.

Objectives

These articles are not aimed at the afore-mentioned Pro Harts, Larry Pickerings et al. As an artist I personally make a good gardener but *Deluxe Paint* and other programs which may be mentioned from time to time overcome a multitude of deficiencies. So art will not be taught but rather instruction will be provided in some of the finer technical points of the *DPaint* program in particular. Let us therefore begin this month with stencils.

Figure 1

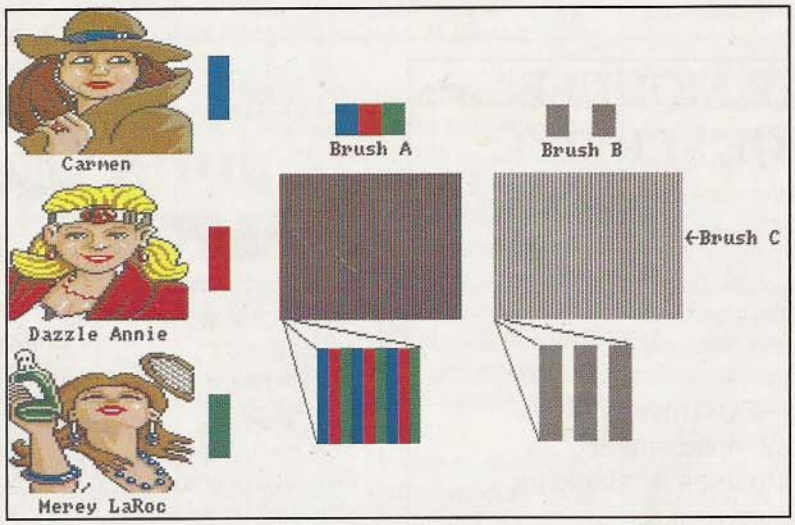
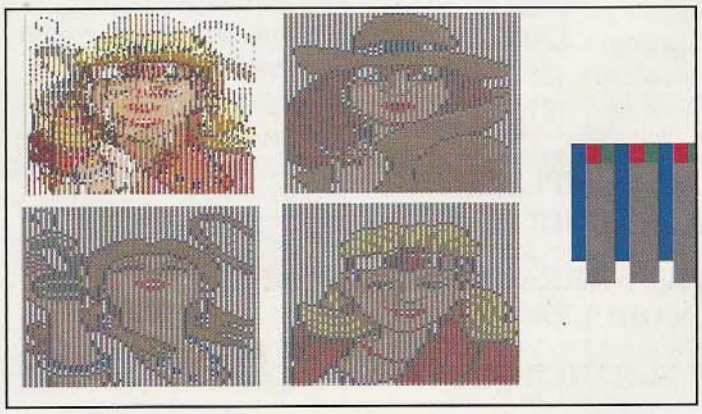


Figure 2



Stencils : Solving Memory Shortages

DPaint has reached its fourth incarnation and its stencil facility has had some exciting new permutations added. Stencils may now be painted down without regard for particular colours. The addition of HAM mode to DP's repertoire has created the need for a new method of selecting the colour range when defining colour lock stencils. More on this later.

For now, fire up *DPaint* and follow along. First, if memory limitations are a problem try this. When the screen selection window opens, click on Lo-Res, 32 colour, NTSC and Swap. Why do I specify these parameters? Lo-Res is the least memory intensive and 32 colour is a convenient number of colours, although selecting 16 or even 8 will save some bit planes and hence memory.

NTSC means fewer scan lines ergo less memory usage and Swap causes less of the program to be loaded into memory. Swap in fact prevents all the tool selections (line, curve, circle, airbrush etc.) from being loaded into memory. Whenever a new tool selection is made the old tool is dumped and the new one loaded from disk a la non resident CLI commands. This slows things down somewhat but saves precious memory for artistic creations, especially large brushes, stencils and animations.

Oh and by the way, resist the temptation to boot *DPaint* from the CLI. You see DP normally closes the WorkBench screen once the program is up and running so as to release

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memory. If however the CLI command <DPaint> was used to commence proceedings, then the CLI itself will remain active, multi-tasking along with DP.

Unfortunately dear old Ami can't close the WorkBench with an active task upon it and trying to select WorkBench closed from the Prefs menu within DP will result in additional failure.

The answer might have been to return to the WorkBench and enter <EndCLI> then return to DB and close WorkBench via the Prefs menu. Unfortunately *DPaint 4.0* does not detach itself from the CLI so unless the original command was <runback DPaint> then the CLI is frozen into inactivity. Save us all a lot of angst by simply starting from the icon after first ensuring there are no other tasks tied to the WorkBench.

Mind you, having said all that, if memory is not a problem and interlace doesn't cause flicker flounder of the eyeballs, then select Hi-Res. *DPaint*'s Hi-Res mode, you see, is capable of showing over 200 colours on screen simultaneously. Don't believe that? To keep you in suspenders, proof of the pudding will have to await a later article. That's enough for now, let's talk stencils (sic).

What is Stencil Mode?

First a brief description of what the stencil is and how it operates. To simplify matters we'll deal with non HAM, colour lock stencils only as the other types (painted and HAM) operate similarly, varying only in their selection method.

Firstly draw a few squiggles on the screen in green using various brush sizes then add one thick red line. Now we'll make our stencil.

Most *DPaint* functions have keyboard equivalents so learn 'em and use 'em. Dragging the mouse up to the menu bar, pulling it down with the right button, moving to the required item then selecting the operation required from the pop-out menu is time consuming and mouse wearing not to mention distracting to the creative juices.

All the short cuts are in the back of the manual so, as always, when all else fails, follow the maker's instructions. In this case simply hit <shift>-tilde. And where, pray tell, is the tilde key? Why it's the one with the wriggley line <~> on it and is located below the Esc and above the Tab key.

Voila! There is the stencil requester. Select the red used in the line previously drawn then hit Make. Choose a colour other than the protected one and try overwriting your red line. Any attempt is doomed to failure. Unless the stencil is turned off of course using the grave <`> key. Same as the tilde key but without the <shift> key. So turn the stencil off and clear the screen <shift>-K. Hit the grave key again to turn the stencil back on then try to draw over the area of the screen which was previously covered by our red line. Can't, can you?

When DP makes a stencil it protects those areas of the screen which are covered by the selected colours. It's not the colours which are protected, rather it is that covered part of the screen itself. Ridding the canvas of those colours by turning off the stencil and clearing the screen does not cause DP to forget the area previously covered/protected. Re-activating the stencil and attempting to draw over that area proves this.

As to what can be done with this startling piece of information I leave that essentially to your own artistic imaginations. Here's one little hint though.

Using Stencils

Grab the largest circular built in brush and write your signature across the screen, then use the stencil requestor to lock the colour used for the signature. Turn the stencil off, clear the screen, grab the one pixel brush (or simply hit the period/full stop key), select the airbrush tool, turn the stencil back on and airbrush your way around the screen. Nice one! Try making a colour cycle range, select cycle paint (f7) and do it again. Nice too! Select "reverse" from the Stencil pop-out menu under the Effects menu and go at it again. Ah, *DPaint* artists do on the tube. A future article on animation will expand on this theme.

How about a little piece-de-resistance though? This effect will require a series of pictures using the same palette. Reasonably detailed clip-art pictures are ideal but any art work will suffice. The spare screen will need to be utilised as a preparation and scratch pad if the pictures used are overly large.

For my example I've used small drawings to save illustration space. Someone's bound to recognise them as Carmen SanDiego herself along with Dazzle Annie Nonker and Merey LeRoc from the original *Where in the World is Carmen SanDiego*. I've actually slipped these in to give a credit to the Carmen series from Broderbund Software. They are some of my all time favourite games and I might add are well worth the purchase price. Artwork larger than these however, often leads to more stunning effects. Use your imagination.

DP's Med-Res is the preferred screen format by the way so let's go to it ...

Step by Step

First up go to the Med-Res screen and hit <m> to magnify a portion of the screen. Now click down a one pixel dot then select a new foreground colour. Click down another one pixel dot immediately beside the first and select yet another foreground colour and lay it down beside the last dot. There should now be a three pixel long horizontal line on screen comprising three different colours. Very carefully now pick that line up as a brush. Don't allow the brush selector box to cover anything but those three pixels as the brush is picked up or the coming effect won't work. The enlarged "Brush A" shown in Figure One should now be attached to your mouse's tail.

Next step is to select the Fill requester (keyboard <shift>-F) and choose Pattern - From Brush as the fill type. Click OK and hit <shift>-R to draw a filled rectangle of whatever size will be required for your particular artwork. The resultant box will appear as that shown below Brush A in the Fig 1. An enlargement is shown below this again. We now have, in this case, a rectangle covered in alternating red, green and blue, one pixel wide stripes. You, my beloved and affable artists, may choose whatever colours

most appeal to your moods. Whatever they are, remember them when we later call up the stencil requester.

By the by, if there are any horizontal or vertical gaps between the lines in your rectangle this may be taken as testament to your sloppy work when picking up Brush A. One must pick up ONLY those three pixels.

For my illustration I'll now pick up Carmen as a brush before calling up the stencil requester. I'll choose blue then "invert" then "make" from said requester to allow all colours except blue to be protected. Next I'll click Carmen down on the rectangle previously prepared. Thing is, due to the stencil, Carmen will only be stamped on the blue lines (every third vertical line). Because the Med-Res pixels are tall and skinny Carmen's features remain easily distinguishable.

Now I'll turn off the stencil and grab Dazzle Annie as a brush and again bring up the stencil requester. Selecting "Clear", red, "Invert" and "Make" protects all colours bar red. Slapping Annie down on the rectangle causes her to appear only on the red lines, apparently superimposed over Carmen. Repeating the previous steps using the green as the lone unprotected colour and Merey LaRoc as the brush, superimposes yet another drawing over our previous pair.

To make sense of our montage now, we need to prepare a special brush. This time it's Brush B. It's once again a three pixel brush. The two outer pixels are a single colour of your own choosing but the central element must be the current background colour. Pick up only these three pixels then select the Fill Requester. Once again click on Pattern - From Brush and OK. Draw a filled rectangle of a size similar to the original one. This will become Brush C.

An enlargement shown in Fig. 2 demonstrates how this brush will become a mask which will hide two of the vertical lines allowing the third to become legible. Moving the mask one pixel in any horizontal direction will uncover another set of vertical lines and another character will flash into view. In fact, if your taste in art runs to Mr. Pickering one could rewrite the meaning of the word "Flash", couldn't one? Hideous thought though, isn't it?

Don't be dirty, turn your attention back to Figure 2. The uncovered result of our exercise is shown in the top left of the picture with the three other pictures being the result of moving Brush C to the left or right. Nice, eh?

Okay then, it's your turn. Try using horizontal lines in interlace. Now that would be something. Using a checker board pattern and two pictures in Lo-Res mode can also be effective.

Next month a brief description of painted stencils and HAM stencils followed by 200+ Hi-Res colours.

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By The Book

by George Kimpton

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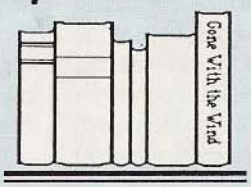

Although the Amiga is one of the most user friendly of computers, many people still have trouble following the manuals supplied by Commodore with their computers. I spend some of my time training new Amiga users. In doing so, it has become clear to me that the supplied handbooks are missing something. People have trouble following the very brief instructions supplied with their computers.

One answer would be to attend Amiga classes - but there aren't any at an entry level that I know of. There are various specialist courses being run - these are not for the beginner.

An alternative is offered by Abacus Books in its series of books for the Amiga enthusiast, one of which is *Amiga For Beginners*. This book is written for the real beginner, starting right from scratch. But don't be put off by this if you are reasonably familiar with the workings of your Amiga, you can still learn something new.

Amiga For Beginners has been published previously, but has now been updated to include detailed explanations about using Workbench 2.0. You will find as you read through it that there are separate sections for both Workbenches 1.3 and 2.0 on the various topics covered where applicable. "... a hands on learning experience ..."

Let's look at what's in it and how it can help you. The Table of Contents and the Index are fairly comprehensive, making it easy to find the subjects of most interest. For the beginner however it is advised that you start at the front and work your way through. This book is intended as a hands on learning experience and I have found over the years that this is the only way to learn properly.

Chapter one covers the basics, like how to put things together, the names of the various components and connectors and what they are used for. Monitor controls are explained and reference is made to the Amiga 3000. Hardware bits and pieces are also discussed along with expansion options and finally the booting sequence is explained.

Next, attention is turned to the Workbench Disk. Intuition is looked at to give a better idea of how things work. Separate sections are devoted entirely to the setting up and usage of the mouse and windows before looking at the contents of the various drawers. Even the clock is covered in detail.

Each of the system's drawers are looked at. Particular attention is given to Preferences, with 1.3 and 2.0 being treated separately. This is particularly useful, for this is the main stumbling area for newcomers who have a great deal of trouble setting up their printers. The new Workbench 2.0 menus are covered in detail explaining all the new features and how to use them. "Workbench 2.0 menus are covered in detail."

One nice thing about this book is it warns you of the dangerous manoeuvres that could cause trauma to you or your computer, that is if you read far enough before trying something. If you jump in boots and all, like so many people, before reading the manual properly you could get some nasty surprises.

There is a short section on additions to your Amiga, but unfortunately these are not covered in the depth necessary to know what you are doing. For instance, there is a wide variety of memory expansion boards and configurations available today. The selection of the right one for your computer and the configuration that you have, to say nothing of the uses you plan for the future, is very important. A wrong selection could be very expensive.

Genlocks are passed over in a few lines too. Maybe the authors reason that there are other books on this particular subject which will help you make the right choice.

There is also a section on AmigaBasic. The first part covers the demo programs supplied on the AmigaBasic disk. The next section deals with writing and working with Basic programs and finally you are introduced to some short and easily entered programs covering graphics, animation and sound.

It is a good book for the beginner who wants to learn more about operating his or her computer beyond the novice level. It certainly explains things clearly and in detail and would bring you to a reasonable level of proficiency. To go beyond this, take a look at other books in the series such as *AmigaDos Inside and Out* or *The Amiga Desktop Video Guide*.

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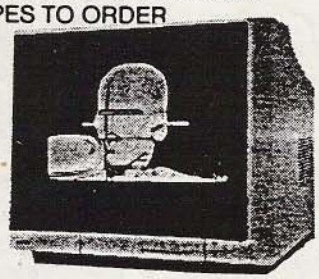

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9/92

Education Column

Our Amiga At Home

Stan Nirenburg takes us through the many uses to which his family have put the Amiga to help provide some ideas for other would-be computer educated homes.

I have been using a computer at home to help me with my studies for quite some time. The first computer I bought was an IBM clone with no hard drive and a monochrome monitor; by today's standards somewhat outdated. About two years ago, I decided that it was time to upgrade; I was looking for an inexpensive computer that was suitable as an educational platform for our young son.

The package we bought was the Amiga 500 Starter Pack. There is no doubt that Commodore have a knack of packaging an idea really well; the Amiga could be assembled and used almost immediately and allowed us to have fun and be productive from day one.

At first, I considered the Amiga as a games machine which could be applied to more sophisticated uses as our son grew older. However, as I read the manuals and understand the operating system, I discovered that the Amiga is a powerful and versatile computer. It is a fun machine to use for any application and it allowed us to explore many areas of interest, something that is not as easy or as cheap to do on other platforms.

After using the basic Amiga 500 for only a short time, I started to realise its limitations. Fairly quickly I invested in an additional 512K of RAM and a second floppy disk drive. This made it easier to copy disks, or files between disks, disk swapping was reduced for programs that resided on more than one disk. Productivity software that made use of the extra RAM was also much more pleasant to use.

My next purchase was a monitor; reading reams of text from the TV was virtually impossible. And, needless to say, it freed up the television for watching movies and videos.

A Hard Decision

Next, I purchased a hard disk and even more RAM. I agonised over this for quite some time as I did not want to spend the sort of money that was being asked for a hard drive. However, in a state of madness at the 1991 World of Commodore Show (for which I had flown all the way from Melbourne to see) I succumbed to the temptations of very cheap prices on the Commodore A590 hard drives.

A hard drive is doubtless a very important part of any modern computer. Not only is it quicker at accessing programs, but it makes multitasking practical, particularly with the addition of extra memory. Multitasking is impractical if there is insufficient memory and if there is a need for continual disk swapping. With a hard drive, it is a simple matter to swap between programs by clicking on gadgets and icons.

My experience has shown that with careful management a 20 MByte hard drive and 3 MByte of memory will allow most applications to be run without any difficulties. However, if I was buying a hard disk today, I would settle for nothing less than one with a 40 Mbyte capacity, particularly if I was dabbling in graphics. Finally, we must not forget that every home should have a printer. It is an essential tool for viewing your work and for preparing assignments.

Putting Amiga to Work

What do we use our Amiga for? Well, it was primarily purchased as an educational tool and that is still what it is used for.

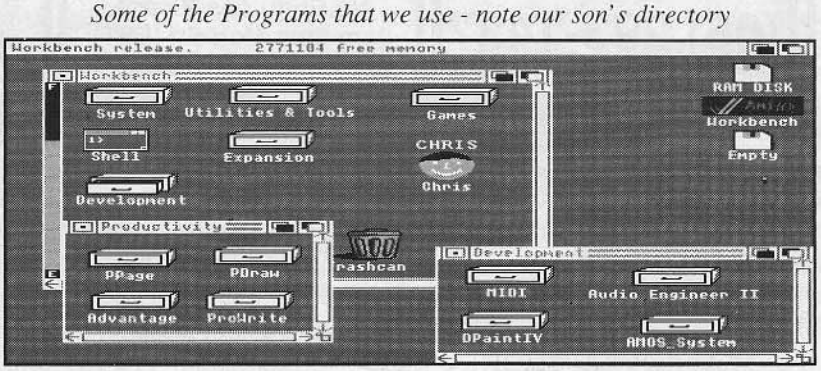
I have tried to put together a small collection of educational software that is suited to our child's age and needs. Much of this is on floppy disks, but I have created a drawer with some games for him on the hard drive. Our son has his own box of floppies and the drawer on the hard disk has an icon shaped like a face which he identifies as his own.

Like many other parents, I was generally dissatisfied with the available commercial software. That is not to say that there are not some very good packages in the market (I have bought a few that I have been very happy with). However, I felt that I could do better than some and also that I could customise software to meet my child's needs.

To this end, I started to develop software using AMOS. This is a very good development language as it is easy to use and can produce visible results relatively quickly. AMOS is also a useful tool for learning programming with older kids.

To assist me in developing software, I

Some of the Programs that we use - note our son's directory



use Deluxe Paint IV to create the artwork. I find this an excellent paint package with heaps of features. Because of the program's versatility, I have discovered that it can be used by even very young children to create shapes, blocks of colour and simple drawings.

Another useful and fun tool is sound sampling software and hardware. For this I use Audio Engineer II (the software) and a relatively inexpensive stereo sampler. Audio Engineer is fun to use as it enables one to experiment with different sound effects and is particular amusing when using your own sampled voice; the children will love it. My initial purpose in obtaining this package was to enable me to use sampled voice and sound effects in the software that I was developing.

Structured Drawings

The Amiga can also be used for music. Just before Christmas we decided to start our son on music lessons. We purchased an electronic keyboard with MIDI capability and Commodore's Alter Audio MIDI package. This piece of equipment allows us to record music from the keyboard into the computer and to play music from the computer. Although it is early days yet, I am hoping that this facility will become an integral part of our son's music education.

Working at Home

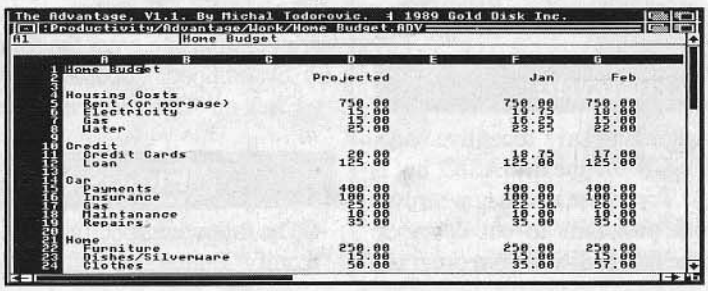
And now onto more serious stuff. Even at my advanced age, I have not forgotten my own education. The two types of tasks I perform most frequently are producing financial models and writing assignments.

For financial modelling I use Advantage, an electronic spreadsheet program. With this I am able to tabulate cash flow projections and to analyse what happens when certain parameters are varied.

A good example is a loan calculator. Once the model is created, it is possible to see how a one percent reduction in interest rates will effect the term of the loan or the monthly repayments. Spreadsheet programs can be used for displaying or analysing any tabular data, to produce financial reports, to graph trends and even as simple databases.

For preparing assignments, I use Transwrite to write text which I then import into Professional Page for final page layout. This works for me because I find it gives me more control over the finished product, especially since I have access to a postscript laser printer. However, there are many good wordprocessing programs that will do an equally good job, including Prowrite and Wordsworth. Even old faithfuls such as Kindwords should not be dismissed, particularly if you already own it. Despite its limitations, bugs and lack of speed, we use it at home extensively to print out text for proofreading and review and just for general correspondence. In fact, it has many good features which will appeal to beginners and it is easy to use.

A Spreadsheet



Lighter Moments

And finally, I must not forget games. I also like the Amiga because it is a fun games machine, and I always like to keep on hand a number of games. Unfortunately, unlike my younger fellow Amigans, I seldom finish a game because I am simply not up to the challenge.

Although it would be ideal to locate the Amiga in the lounge or family room to allow free and easy access to it, we have found this impractical. Instead, we have located the computer in a separate room (the "'puter room" to our son). This has the benefit of keeping the Amiga away from dangerous toys that could be thrown at it and also means we can use the computer in peace when our son goes to sleep.

As with every valuable piece of equipment or furniture, we have laid down certain rules. In particular we discourage violent play, and we prohibit food or drink in the study - there is nothing worse then chocolate on the keyboard or milk inside the electronics. As a further precaution, we have put a keyboard skin over the keyboard. Oh - as a final warning, watch out for the credit card in the disk drive - fits well but not so easy to remove!I hope that this article has given you some ideas and food for thought. Obviously I have presented only one way of using the Amiga. And, after all, one of the attractions of the Amiga is the way in which it can be easily customised to your tastes and preferences.

Even after two years of use, I still find the Amiga fun. There is no doubt that it is still one of the best computers to allow you to express your creativity.

Please write in with your comments, suggestions, advice, experiences and questions to PO Box 136, Forest Hill, Victoria, 3131.

Until next month (and who knows what that will bring), have fun.

You Can CanDo

Part 3

by Greg Abernethy

Last month I accidentally sent the wrong CanDo tutorial for publication. The tutorial should have been on a system information window that resides on the Workbench. Sorry about that! This month's tutorial will be the System Information window.

The System Information window will display information about the CURRENT TIME and DATE, available CHIP and FAST RAM, largest chunk of continuous memory and whether the Amiga the program is running on is a PAL or NTSC machine. Also the window can be ICONIFIED so that it can run in the background and be called upon whenever needed, simply by clicking on the CLOSE gadget for the window.

The program is a relatively short program, as there is only one routine, two cards and three scripts. It demonstrates how a useful utility can be designed very quickly, with a minimum of programming effort. Also I have included some useful hints and tips for using CanDo effectively. Okay, let's get to work.

Setting Up

First create a window with the following specifications;

Dimension

x = 0 : y = 80

Width = 640 : Height = 80

(Adjust the height according to your personal preference. I set this height for ease of access when designing.)

Objects

Close Gadget : Window Movement Gadget : Drag Bar

Options

Set the window option to "TRY TO OPEN THE WINDOW ON WORKBENCH"

Set the Window Title to "System Information".

Once the window is created return to the Main Panel and select the "CARD" button to edit the Card. Select "Edit" and when the Card Panel appears, set the Card's name to "Panel".

Enter the following line in the AFTERSTARTUP script of the Card.

```
Do "SystemCheck" ; This is the routine for setting the information fields in the window.
```

The Main Routine

Routines in CanDo are designed to save repetitive code. The routine is similar to a GOSUB routine in BASIC, but is much easier to use and access. Try to use routines wherever possible when designing your programs to cut down on program size, and to increase the readability of your program. Also, I have found that by using routines extensively it can help when it comes to debugging large programs.

One major problem with CanDo V1.5 is the fact that ROUTINES can only be accessed from within the SCRIPT EDITOR. This has been rectified in CanDo V1.6 which is now available in Australia, through DesktopUtilities in Canberra.

While we are in the Card Editor we will create our "SystemCheck" routine. Select the "Routine" menu option. Click on "Add" to create a routine. Enter "SystemCheck" as the routine's name. Click on the "Ok" button. Enter the following script in the Routine Editor.

(Please Note: CanDo uses the American date format of Month/Day/Year. I decided to convert the Date to a format I could understand easily.)

```
Let Day = GetWord(TheDate,2,"/")  ; Get the Current Day
Let Month = GetWord(TheDate,1,"/") ; Get the Current Month
Let Year = GetWord(TheDate,3,"/") ; Get the current year
Let Date = Day||"/"||Month||"/"||Year ; Join them together sensibly
SetText "Date",TheTime||"  "||Date ; Display the new date and time
If NTSC = TRUE ; is the Amiga a PAL or NTSC machine?
   SetText "PALorNTSC","Running an NTSC Machine" ; it's NTSC
Else
   SetText "PALorNTSC","Running a PAL Machine" ; it's PAL
EndIf
SetText "Chip","CHIP Memory :"|||AvailableChipMemory|||"bytes"
SetText "Fast","FAST Memory :"|||AvailableFastMemory|||"bytes"
SetText "Largest","Largest Chunk:"|||LargestChunkOfMemory
|||"bytes"
SetText "Total","Total Memory :"|||AvailableMemory|||"bytes"
;Set the fields to the Appropriate memory sizes.
```

This routine will find the information we require and display it in the appropriate fields in the System Information Window.

Click on "Ok" to return to the Card Editor and then "Ok" again and return to the Main Panel.

A Timer Routine

CanDo has a Timer routine Editor (the CLOCK button on the Main Panel). Timers can be useful for performing an event once or repeatedly while the program is running. We will create a Timer routine that will be repeated every ten seconds. This routine will update the information in the System Information Window using the above routine. Click on the CLOCK button and select "Add". Enter "Check" as the Timer Name. Click on the "Recurring" box to set the Timer to REPEAT. Set the time interval to TEN seconds. Click on the "Occurred" script button, and enter the following line in the Editor.

```
Do "SystemCheck" ; Update the System Information Window.
```

Click on "Ok" twice and then Return to the Main Panel.

Fields and BUTTON

The following specifications are for the six fields and the "Iconify" button, we will create in the Window.

Field Name	Horizontal	Vertical	Width	No. Of Characters
Chip	300	15	320	40
Fast	300	29	320	40
Largest	300	43	320	40
Total	300	57	320	40
Date	12	15	240	30
NTSCorPAL	12	29	240	30

FIELD BORDER STYLE - DOUBLE

Button Name	Horizontal	Vertical	Border Style
Iconify	50	49	BOX

The Script for the button is as follows;

GotoCard "Iconify"

Once you have created the fields and button, you are ready for the last part of the program, the creation of the ICONIFIED WINDOW.

Iconified

The easiest way to create an iconified window is to add a new card, and give it the characteristics of a small window on the Workbench with a Close Gadget that, when selected, will return to the System Information Card.

Return to the Main Panel and Click on the "Card" Button. Select "Add" to create a new Card. Enter "Iconify" as the name of the Card.

Return to the Main Panel, and click on the "Window" button to set the characteristics for the window which appears below.

Window Name	X	Y	Width	Height
<- Click here for Info	380	0	260	12

Click on the "CloseButton" script button and enter the following script in the editor;

GotoCard "Panel" ; return to the System Information Window

Click on "Ok" and return to the Main Panel.

Save your program and then test it in "Browse" mode for any errors.

Although there was very little actual programming code, it is obvious how CanDo can be used to create quite complex applications with a minimum of effort. The main requirement is some initial planning before commencing the project, with emphasis on the extensive use of routines.

Hints and Tips

I recently upgraded to Workbench V2.04 on my old A500, and was amazed at the difference it made. The new Workbench allows me to leave CanDo and the decks I'm currently working with, on the Workbench screen. When I boot up I simply single click on the application I want, hold down the SHIFT key and double-click on CanDo to load the deck.

When using CanDo, use the ExpertMode option, as this will enable you to do extensive testing and debugging from within your scripts. I use the ExpertMode features extensively, and would be lost without them. To setup this option, click once on the CanDo icon and select "Information" from the Workbench menu. Click on "add" to adda new Tool and enter the following;

ExpertMode = ON

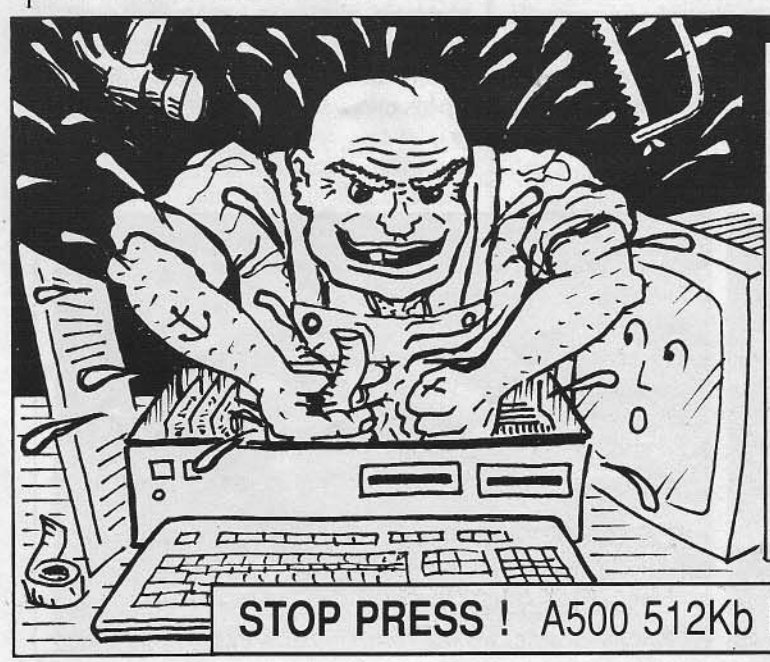
This will activate the ExpertMode when CanDo is used next. See the CanDo manual for more details.

I have found that CanDo works best with eight colours or less in Medium-Resolution and 16 colours or less in Low-Resolution.

Coming Soon

Next month, as promised last month, we will design a straightforward TextFile viewer that will allow you to print the file once it is loaded into the viewer. I will use a SubDeck for part of the program to introduce the concept of using SubDecks as requesters.

Write to me, c/- Australian Commodore and Amiga Review, with problems, ideas for programs, or programs you have designed using CanDo. I would be very interested to hear from anyone who has designed an interesting program, as I could include information on it in this column.



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Public Domain Software

Hot PD

by Daniel Rutter

This is the first in new regular column on what's taken place in the world of Public Domain and ShareWare software of late. It's a sister piece to my other column in *Professional Amiga User*, and like that column, there will be an occasional "Hot PD" disk associated with some articles, which will be available from Prime Artifax.

In contrast to the spartan design of the PAM disk version, the ACAR effort will feature icons, menus and all those other nice things that make the Amiga accessible to people who don't have the time to type mind-boggling command line epics. Note that there won't be a Hot PD disk every time, since a lot of this article will be dedicated to reviewing the fun new disks coming into the various PD libraries.

Latest Games

The thing that's struck me most about the recent offerings in the PD world is the flood of good games that've hit the streets. I have compiled some of the best onto disk eight of Prime Artifax's highly successful Hot Games series, which is available now.

So what do you get? Well, for a start, the disk is bootable and gives you a cute menu after a bit of drive buzzing, from which you can select any of the games. Menu items are also available for game documents - and almost all are fully documented. From Workbench, everything is iconed and dead easy to install onto hard disk should you so wish, with instructions included.

The games are, in alphabetical order:

Asteroids - Yet another implementation of this old chestnut. This one's claim to fame is that it is exactly the same as the original arcade version in look, play and sound. A nostalgic inclusion, but fun nonetheless.

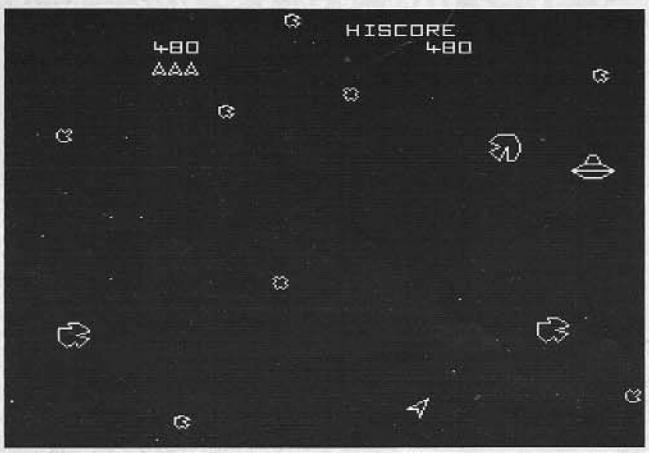
BugBlaster - A challenging and remarkably good blast-up in which you ostensibly are in control of a remotely operated bug annihilator in a garden overrun with the ol' arthropods. The more you blast and the faster you do it, the more money you get to buy hyperweapons in the Death Shop. Mindlessly violent and excellent fun, with great graphics and good sound.

Microbe - Another visually remarkable annihilation-fest, this time based loosely around the ancient *Tempest* idea of a little violent thing buzzing around a ring drilling unfortunate Communist Baby-Raping Aliens From Mars. This one gets a bit repetitive once mastered, but is really very very impressive for a freely redistributable game.

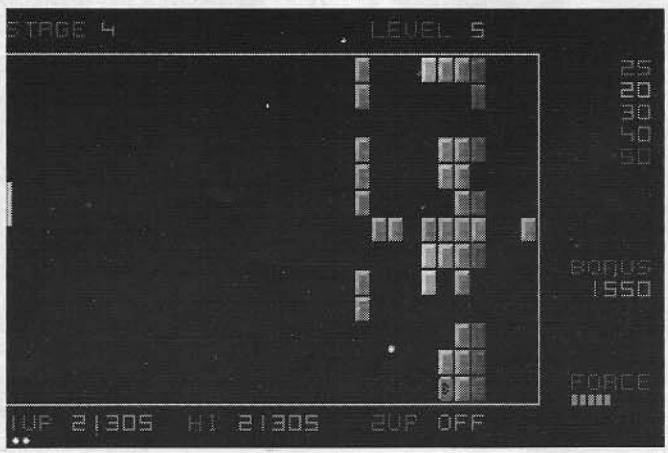
Poing - This one is another *Arkanoid/Breakout* clone, in which you bounce a ball off a bat to bust bricks. In *Poing*'s case, though, you bounce from the left of the screen instead of the bottom, and to advance to the next level you must whack the back wall ten times. If you miss the ball you get to go through all your previous levels with the ball moving at Warp Factor Nine; if you catch it, you get a second go. There are lots of bonuses and plenty of levels, and this really is another astonishingly good PD effort.

Revenge Of The Mutant Camels - Veteran gamers should know this one. The very name just screams at you that here comes another cataclysmic smorgasbord of brainless annihilation from the World's Favourite Camel Fetishist, Jeff Minter. This one is actually quite an old game, originally converted from eight bit machines by MasterTronic, who made a complete dog's breakfast of it. Jeff has now stepped in and whipped up his own version, and it's a corker, if

Asteroids



Poing



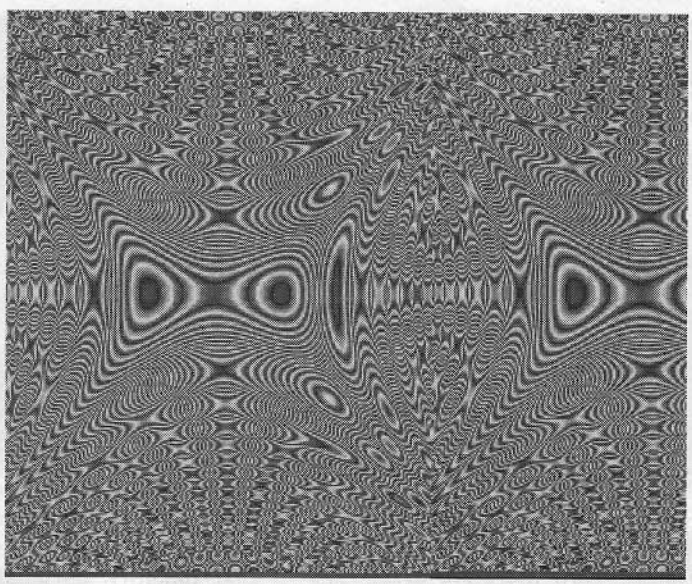
not quite as flat out manic as its predecessor *Llamatron*.

Jeff's games, if you haven't met them before, tend to be visually good but not great, sonically unsubtle but loud, and have the best gameplay this side of Texas. This one's worth the price of the disk all by itself. Note also that this is the PAL version of the game, not the squished NTSC version on Fred Fish's library. Accept no imitations!

RingWar - This one looks like a blast from the past but is actually a new game, just done in the vector graphic style of the simple yet compelling arcade games of the early 80s. You're a little ship (big surprise). You have to blast through three levels of defensive rings around a big ship. Then shoot it. You win, next level. Of course, the big ship shoots back. And there are mines. You have a shield button, though. Those are all of the elements in this game. It's fast, smooth, and viciously simple. You'll love it or loathe it.

Trix - The last game on this compilation is another golden oldie, this time a clone of the all-time classic *Qix*. Up until now, the only version of this simple game (fill in the screen with blocks of colour while avoiding baddies) available on the Amiga was called *Bally III*, and was okay but not great. *Trix* is great.

Sound is just like the arcade (i.e. horrible, but you can turn it down and lose little), gameplay is fast and the enemies are just like the arcade ones. All that is missing is the trackball of the original, but the joystick's not bad. A highly strategic yet nerve-wracking game which I can't recommend too strongly.



Colour cycling madness from the Styxtro

New from Demo Land

So what else has come into the PA library since the last edition? Well, thanks to the estimable Tim Strachan of Megadisc, we've recently collected some good demos. Now, Megadisc's PD library is a lot larger than Prime Artifax's (if you can't find something elsewhere, Megadisc's a good place to check out), but it does not stock non-DOS disks.

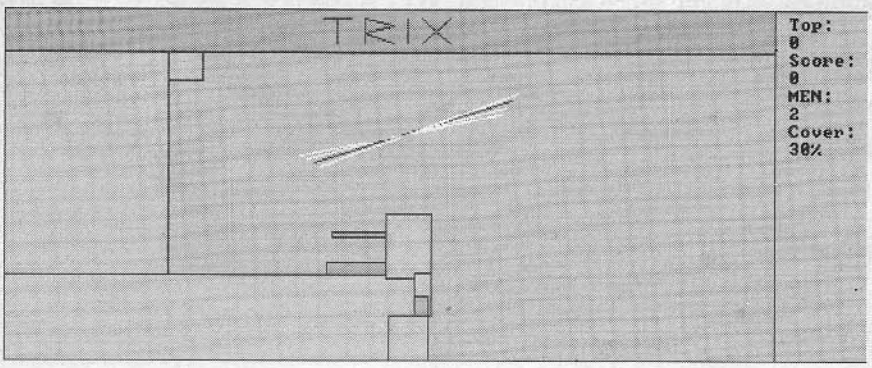
These are disks which, on booting, don't give any sort of ordinary Amiga screen before doing whatever they do, and on the Workbench come up as something like DFx:NDOS. So when people, against all messages to the contrary, send non-DOS disks to Tim, he usually just formats them and uses them for things like Megadisc's free PD catalogue.

Now, however, Prime Artifax will regularly be skimming off the best of the new stuff and putting it into its library.

Unfortunately, it's hard to show you what a lot of these demos actually look like, because they do deeply peculiar things graphics wise and hence are very difficult to get screenshots from using the Great Reviewer's Tool, the Action Replay III cartridge. Hence the screenshots accompanying this article will be of the more boring bits of the more boring demos; I'm afraid the same goes for the game screenshots too. You'll just have to take my word for it!

The ***SkyTro Demo*** is a nice one, which manages to escape the trap so many recent demos have fallen into of all looking precisely the same. It does a nice colour cycling bit (check out the psychedelic screenshot, and imagine it cycling!), has a fast wireframe animation and also includes an enormous scrolling picture of a scantily clad cartoon female with a depressed looking animal printed on an item of intimate lingerie. Music is snappy and it all tools

Trix



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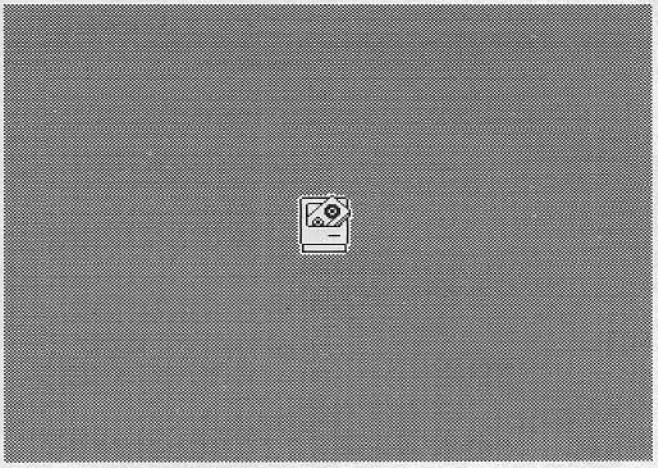
The Grapevine MegaMix main screen



The tasteful intro to the Grapevine MegaMix

along quickly enough.

TechnoMania 2 is a music disk containing several LOUD techno type tunes, which are danceable if not the sort of thing most people would use as background music. It benefits hugely from my monster sound system, and you'd do well to hook up Ami to the stereo if you're into this sort of thing.

Crystal Symphonies, from Phenomena and Scoopex, is a very nicely presented music disk with some very good tunes and a tasteful animated background, featuring bouncing strings of balls and appealing fireworks.

Music, Music, Music

Still on the subject of music disks, we've got no fewer than three of the "Megamix" type music disks this time. They are the *Grapevine Megamix, In Full Affect* (sic) and the *Kefrens Megamix*. The last two are house/hip hop type demos, *IFA* in the epilepsy inducing random image style of the classic *Coma* demo, and *Kefrens* sampling heavily from *Pump Up The Jam*. The *Grapevine* mix is still a far cry from Mozart but can at least be listened to for its own sake.

All of these disks are designed to be stuck in the drive and sit there for a great length of time, playing LONG tunes. For example, the *Grapevine* offering is 45 minutes in length! If you're into good music disks which, shall we say, at times sound like Barry Manilow grappling with a bush pig in a compost tumbler, these are for you.

And to wind up this lot, there's the aesthetic *Magic 12* demo, which has a gorgeous golden title screen. This is a rare thing - a demo created by people not obsessed with the Great Quest to Render Scrolling Text as Illegible as is Humanly Possible or the associated Let's Put as many Stupid Little Red Things as we can On Screen At Once and Bore our Audience to Death Challenge. It is a pretty, if slightly short demo, with good music and an enormous, beautiful scrolling logo in the middle, and good stuff for gobsmacking the old IBM'ers.

You can reach Prime Artifax on (02) 879 7455 or outside of the Sydney Metro area on (008) 252 879, which is a free call. Megadisc's monolothic library is available by calling (02) 959 3692, 24 hours a day.

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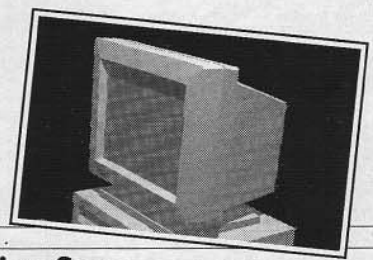

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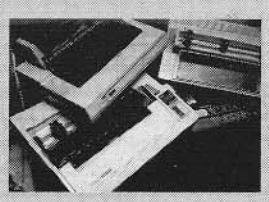

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Caring for your Amiga - Part 4

Fixing a Faulty Keyboard

by Kevan Fitzakerley

Recently I received a phone call from a person who was having trouble with his computer - some of the keys would not work. He had rung a local service agent and told them of his problem. They said they would check the computer for him and report back on the fault for a standard service fee and depending on the fault the total repair charge could be from $50 to $120.

Being an invalid pensioner, the gentleman decided to persevere rather than pay the repair fee. Eventually the problem worsened. At this point this he phoned me.

I asked him to bring the computer over. While I was checking various connections and ensuring that everything was pressed home properly, he lit up a cigarette. Straightaway I had visions of what the problem was!

"Do you smoke while you are using the computer?" I asked. "Most of the time," he answered. So I removed the casing, and sure enough, the internals looked like an ashtray. Enough to cause problems. The next thing to check was the main source of the problem - which was the keyboard. As suspected there were traces of cigarette ash.

After a complete clean the computer looked and worked like new again! Cost: about two hours' time.

Here are the steps you need to take to keep this kind of thing from happening to your machine, especially if you smoke while using your computer!

Step by Step

As always, if you feel that this process is beyond your capabilities, then consult a recognised service agent.

(1) Turn off all power and disconnect all leads and cables.

(2) You will find six hex type screws on the underside of your Amiga A500. Remove these and set aside (or replace these with a Philips head type screw of a similar size.)

(3) Turn the computer the right way up and gently remove the top cover.

(4) As you face the computer, you will notice a set of seven leads that connect the keyboard to a set of pins on the Printed Circuit Board. (Hereafter known as the PCB).

Make special note on how these leads are connected - the BLACK lead must be to the left outside pin of the pin connector. Gently remove this connector. DO NOT pull by the leads, remove by taking hold of the connector and gently lifting from the connecting pins.

(5) The keyboard has a total of 94 keys, which to properly clean your keyboard need to be removed. WARNING! If you are short tempered avoid this part, as it takes an awful amount of time and a great deal of patience! On the other hand if you are confident enough, proceed with the following:

(6) Using a thin bladed screw driver, gently prise off all the keys. Start from the most outside keys and work your way to the centre of the keyboard. Depending on which version of the Amiga that you own, more than likely each key has a small spring attached - be careful that you do not lose these.

Special note should be made that some keys ie: The Space bar, Shift keys, Tab, Return key plus Enter and O key on the KeyPad have a tiny metal bar arrangement plus a spring or several springs (this is where you will need all your patience when putting every thing back together).

Do not be too concerned if the keys get mixed up, when you are ready to put the keyboard back together, just consult your Amiga manual and find the page with the keymap for USA1, and use this as your guide to make sure that you replace the keys in the right place.

While you are at this stage of having removed all the keys, you can as I do, put them all in a bucket of warm soapy water and give them a good clean. Just let them soak and when you are ready to reassemble the keyboard wipe each key with a tea towel. Be sure that they are completely dry before reconnecting.

(7) Turn the keyboard upside down. Here you will find a total of 30 tiny screws, remove all these and set aside in a safe spot.

Gently separate the two parts of the keyboard. Extreme care should be taken at this point, between the top and bottom parts of the keyboard is a thin piece of plastic which has a PCB embossed to it, be careful that you do not bend this or damage it in any way.

This PCB should be wiped gently with a cloth and pure alcohol, you can obtain a small bottle from any chemist. Pure alcohol is instant drying and does not leave a residue. At this point you should check the PCB to ensure that there are no broken or damaged tracks.

When you are satisfied that everything is in order, then it is time to reassemble all the parts. Follow the above steps in reverse.

Final Tips

While you have your Amiga in this dissasembled state, it's a good idea to perform some of the items that have been mentioned in previous chapters.

The main thing that you need to do is allow yourself plenty of time to perform your maintenance program. Do not rush things, pay attention to the job at hand, prepare a plan of the things that you want to do, make a list of any tools that you may require, like screwdrivers and small containers to store the screws etc. You will also need a clean flat surface to work on.

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For Beginners
Andy's Attic

by Andrew Leniart

Welcome back to Andy's Attic. I've had a fairly good response from local Australian software programmers to the offer I made in the last couple of issues of ACAR for them to submit useful software they have written. Room for just one this issue along with a couple of answers to some of the letters that have been rolling in. Please keep that feedback coming. So without further ado ...

CFX 5.100 - Crunched File eXaminer!

I've spoken before about how frustrating it can be to get a file from somewhere and then try to figure out which is the executable and which is not. But what if you know the executable but just want to know more about the file?

If the file has been "crunched" by something like *PowerPacker* or one of the other numerous file crunchers available on the PD scene, you may want to uncrunch the file for whatever reason and not have a clue as to which uncruncher to try and use. A lot of people, myself included, hate crunched files as while they make more space available on your hard drive, they slow things down and quite often, do not operate correctly if the cruncher did not do its job as well as it should.

CFX can alleviate this problem to a large degree and provide a host of other services for you to boot. Here is a short extract from the documents that come with the software ...

CFX was written to enable the Amiga user to identify certain characteristics of given files. The file, let's call it 'TEST', is a file that you received from a BBS, but there were no accompanying documents with it. The file is executable, but you have a feeling that it is crunched. PowerPacker doesn't know this file's 'crunch' type, so you can't easily identify the filetype. You could use a debugger/monitor to find what the filetype is, but the most you'll get out of that is to ascertain that the file REALLY IS crunched. Well, from my experiences on the Aust Amiga Fido Echo, I know that there are a lot of you who don't like receiving crunched files. This program attempts to let you know if it is crunched, and most possibly, what it is crunched with. You can then decide what to do with the mysterious file 'TEST'. Keep it or trash it?

Unlike many other so-called 'file examiners' on the Amiga, CFX has a very large brainfile from which it can acknowledge a large percentage of the current Amiga filetypes. It will then report to you what type of cruncher was used, or, if it isn't crunched, what type of file 'TEST' really is.

What's not included in the above short snip of the doc's that accompany CFX, is the program's ability (by the use of switches) to automatically uncrunch files which it tests and scan the uncrunched result for any sign of known virus strains in the brainfile which it has built in. The brainfile is updated with each new release.

This program recognises a host of different file types (the list is growing all the time too) and has the potential to be a very useful addition to any serious Amiga user's C directory. Due to the nature of the program, CFX is at the moment strictly CLI use only. However if enough interest is shown in the software, perhaps the author could be convinced to add some Intuition support and make it a bit easier to use via requesters and workbench.

CFX is released under the "ShareWare" concept so you can try before you buy. It's easily obtainable on many BBS systems around Australia for modem users, however for those that do not have access to a modem, you can still get a copy of this little gem by writing to the author direct and including a SSAE along with a disk asking for a copy of the Unregistered version to try. If you ask nicely, I'm sure that Bob would oblige.

Software information: Author: Bob Rye. Contact Address: 4 Coulter Street, Wendouree Vic 3355. Current CFX Rego Fee: $25.00 (once only fee).

Along with CFX, you can expect to also receive another PD program which Bob has recently written called DRED. Dred stands for Disk REDucer and is a nifty little program that can save you oodles of disks by using intelligent means of working out what files should go on what disks to enable maximum storage of files on floppies. Great stuff, so send Bob a note and ask for a copy of both. But please be fair and ensure that you include a disk and a SSAE if you expect to get anything back.

Letters

Drive Problems

Gerald Tavares of Keilor Downs in Vic writes: Whenever I copy a disk from DF0: to DF1: the destination disk always comes up with Read-Write errors. The problem seems to start at the 14th track (I think) and the screen flashes at every second or third number until the end of the copy.

When I run the destination disk through a virus checker, a requester

pops up and tells me that there is a read-write error on the disk. This only happens when the disk is in DF1: If I do the same check on the disk in DF0:, no problem. In fact, the virus checker gives a full list of what is on the disk.

It's obvious that something is wrong with the external drive. But what? The drive is a Roctec. Big problem is that I can't take it back to the place of purchase as someone brought it back for me from England. What I want to know is if there is any other solution? Thanks very much for listening.

AA: I don't see why your screen would flash while a disk copy is going on as I have never encountered this problem myself. However from the way you describe the problem, my guess would be that the external drive almost certainly has a misaligned read head. This could easily be caused if the drive had a bump or knock during its trip to Australia. Unfortunately, that's a risk you take when buying hardware overseas.

There is only one solution to your problem and that is to have the drive looked at by a computer technician. He will use some diagnostic software to check the drive heads and physically realign them for you. The good news is that this is not normally a very expensive repair and should set you back no more than about $20 to $40 depending on where you go. Get out the old phone book and ring around. Prices vary.

Note if the drive heads have actually been damaged rather than just thrown out of alignment, it could be a different story altogether. Hope that's not the case for you.

Super Workbench - Problems with Speak

David Rich of Waverly in NSW writes: Dear Andrew, I read your article in the March issue of ACAR regarding the Speak: device. I have been trying to write script files using Speak: without much success. I am running Super Workbench 1.3 from Prime Artifax. The file DF0:Devs/Mountlist contains the following: "Handler = L:Speak-Handler"

The problem is that there is no such file in the L directory of my Super Workbench. Thought you might like to pass this on to other users of Super WB, who may also be pulling their hair out.

AA: Super Workbench was designed to have the best of PD included on it and Prime Artifax have done a fine job in cramming in so many utilities on a single disk. However this is done without doubt at the expense of deleting what the compilers considered to be the "less used" items that would be least likely to be missed by the majority of users.

With hindsight, perhaps it would have been a good idea for them to leave a little room for a small text file that listed the items removed from the "stock standard" WorkBench 1.3 to prevent cases of hair loss such as you have experienced.

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I'll be sure to pass on your comments to them to keep in mind for future compilations. In the meantime, if you have not already done so, a simple fix to the problem would be to delete an item or two which you don't often use from a backup of your Super WB and copy L:Speak-Handler back onto the disk from an unmodified version of WB 1.3, effectively customizing Super Workbench to suit yourself.

If you still have problems with writing script files using speak:, write back with a couple of examples and we'll try and sort them out via this column.

Thanks for bringing attention to a problem with using modified Workbench disks to the other users of this disk.

Which Amiga is Better?

Brian Reid of Penrith in NSW writes: Dear Andy, I have been reading ACAR for quite some time as I own a C64, however I have decided to buy an Amiga. You have demonstrated your knowledge of this computer quite well to me through your pages. I am therefore writing to you with the hope you can answer my questions.

What computer? I will be using it generally for games, but I'm a student and also want to run programs like Desktop Publishing, *Imagine, Deluxe Paint* and the myriad of utilities available. As most good programs need at least 1 meg of RAM a standard A500 won't do.

Trying to understand all the info in the ACAR advertisements is like a nightmare to me. Mother boards, Fatter Agnus chips etc. The question is, if I buy an A500 which is cheaper, can I get one with 1 or 2 megs of RAM, enough to allow me to run any program? How is the A2000 better and how is the basic version different to the basic A500? I may even buy one from the *Trading Post*. Do you think this is a wise move?

I've also read of the A500 Plus. Is this available in Australia? If so, will all present programs run on its new 2.0 operating system or does this system make most programs incompatible?

Finally, would it be cheaper and less hassle to buy an A500 and have it upgraded or pay more for an A2000 and perhaps need to have it upgraded a bit anyway?

Thanks for your patience Andy. I hope you can help me out on this one. Look forward to hearing from you soon.

AA: Starting from the top. You're quite right, most software nowadays does indeed require at least 1 meg of RAM to run. RAM is like cash, the more you have of it, the more comfortable you'll be. But don't write off the popular A500 because of that. By replacing some of those confusing standard chips you spoke of, you can expand the Amiga 500 quite easily to give you one meg of CHIP ram (desirable for graphics intensive software like *Deluxe Paint*). In addition to that, via third party utilities, you can further expand your fast RAM to eight meg, though this can be a little costly.

A better alternative would be to purchase a hard drive such as the GVP model available for the A500 and expand RAM via the memory slots in the hard disk unit. Rest assured you will require a hard disk for practicability reasons once you start

getting seriously involved in the productivity software scene.

Whether or not an A2000 is better than an A500 is not the issue really. It depends on how much you intend to do to the computer in the way of add ons. While the initial outlay for an A2000 is more expensive than an A500, any expansion such as a hard disk or whatever is usually cheaper to do on the A2000 machine than the same expansion on a A500.

However if you consider purchasing the A2000, you should also consider spending a bit more and getting the A3000 which has superseded the A2000 and is a faster machine all round.

I apologise for probably confusing this issue for you even more. But it's really not a question one can adequately answer via a couple of paragraphs. Best bet would be to ring or (better still) pop down to a local Amiga user group and talk with some people that are using the different machines.

Another good thing to do which helps in this type of decision is to look through back issues of Amiga magazines and read reviews on the various models which you are interested in. Certainly all models have been covered in previous ACAR issues. Another good magazine for this type of information is a "Diskazine" called Megadisc advertised in all issues of ACAR.

Buying an Amiga secondhand via the *Trading Post* is not all that bad an idea as one can really get a bargain by looking in the right place at the right time. Things to consider are how old the machine is, which version of ROM comes with it, what add ons and software come with it etc.

Keep in mind however that buying a secondhand machine involves risks as well. It could have intermittent faults for example that may not show up during the usually quick play around you get with the machine before your purchase from the seller. There are no guarantees with secondhand goods and the adage "let the buyer beware" should be taken note of when dealing with any secondhand goods.

The A500 Plus is not currently available in Australia, though it should be soon. Compatibility problems should not be a major concern with this machine.

To answer your last question, if I personally were in your shoes, I would probably opt to wait until I could afford an A3000 and go with that. But this all depends on how much funds you have to spend and how much of a hurry you are in upgrading from your C64 to an Amiga.

At the moment, I personally use an Amiga 500 with a Commodore A590 hard disk attached. My Amy has the standard 512k chip RAM, and two and a half meg of fast RAM installed and to date, it's done everything I need. Quite a good combination really, which suits me down to the ground. Whether or not it would suit you is a question that only you could answer. Hope this has been of some help to you.

Well folks, unfortunately, that's all we have room for this issue. So it's ciaou fer niaou from Andy's Attic and well see you next time. Remember, keep hammering those keyboards. Till then ...

You can reach Andrew Leniart at his popular Victoria based BBS on 03-749-4897. Or write to him at: Andrew Leniart PO Box 1335, Hoppers Crossing, Vic 3029.

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The Geos Column

by Arthur Stevens

Welcome to another Geos column, and a bit of an update on what's happening with GeoWorks, the company that developed (as Berkeley Softworks) the *Geos* line of products. There have been rumours around the industry that Geoworks were going to dump *Geos64* and *128*, and land the entire distribution in the lap of American magazine *RUN*.

This appears NOT to be the case. While *RUN*, it seems, has been granted the US rights to distribute *Geos* products, GeoWorks will continue to market *Geos64* and *128*, and distribution in Australia will continue to be handled by Computermate Australia. The simple fact is the only thing GeoWorks won't be doing is enhancing the *Geos* range. The base product is at its final stage.

This of course doesn't stop third party software and hardware developers from releasing Geos-compatible modules, programs, Hard Disk drives etc, and it looks like Creative Micro Designs is likely to take the lead in that area, with their range of hard drives, Gateway and Ramlink etc.

Letters and Electronic Mail

For those of you with a modem and a terminal program, a reminder that your *Geos* queries can be directed to the Geos Support Board at the Talisman BBS just outside of Melbourne. The contact number is (059) 44 4061, and you can leave your queries in my Electronic Mail under ARTIE, or you can write to me c/- The ACAR, address at the end of this column.

From the electronic mail department then comes my first letter and Peter from Templestowe says, "I have been trying to use *GeoTerm* with my modem and get nothing but garbage. Is there a timing fault?

"Actually I've noticed the same thing, on a 300/300 modem the garbage is reduced to just the odd garbled word, whereas on 1200/75 whole sentences are junked on the screen. Call it a wild guess, but it could have something to do with the fact that *GeoTerm* was written in the USA and is designed for a 60 Cycle Electricity Grid, and of course here in Australia we operate on a 50 Cycle system (course I could also be way wide of the mark!)."

AS: Peter's electronic mail query was posted on the Commodore Image Meg-A-Net and from the USA we received this reply from Old Mike, Chicago Illinois, "I have used *GeoTerm* 1.0 and 2.0 extensively and while 1.0 was riddled with bugs, 2.0 worked quite well. Keep in mind that it isn't a graphics capable terminal, so if you log onto a Commodore Graphics BBS and identify your Terminal as a Graphics Terminal, you'll get the graphics as control characters. Try logging on as a TEXT ONLY terminal, and see if that doesn't help."

Back to Peter's letter, "I also have the *Geos* program, *Import Runner* and the documentation mentions importing *MacPaint* to *GeoPaint* format, however it doesn't say how to do it. I used my school's modem from a MacIntosh and transferred a *MacPaint* file to a BBS, then I downloaded it onto a C64 formatted disk and tried converting it using *Import Runner*.

"All I got was an error: $0b, so I switched off and loaded the *MacPaint* file into memory and saw its starting address was at $0b00 so I get the feeling that there is a specific memory location that the *MacPaint* file must start at, but I don't know what the address is. I am only assuming this, I might be completely wrong. I think *Geos* is great, but it would be greater if I could get these Digi Demo's going."

AS: No doubt about Peter, he doesn't ask the easiest questions, but he's not the only one, I also received a letter from Mauro Matera of Carramar NSW, and he says: "At work I use MS-DOS and Microsoft *Windows 3* applications and an Apple Mac. In this environment I often scan text and graphics using the Mac and transfer the results to the MS-DOS machines.

"My question is: Can the graphics file types of these various computers be inter-converted effectively, such as can be done between MS-DOS and Apple MAC graphics formats? For example, I would like to use the Apple flatbed scanner to produce images that could be imported into *GeoPaint* as line-art or 16-shade grey scale, or perhaps into an Amiga graphics format."

AS: Well, firstly I've seen limited documentation on *Import Runner*, in that I bought it along with a full package from the States some months ago, but the documentation only included how to import *Koala Paint* and *Doodle!* graphics, which I might add, work very well. Absolutely no documentation about *MacPaint*, however our American friend "Old Mike" has a bit more advice, "I have had great success using a Geos utility called *MacAttack II*. I originally got it from QuantumLink (USA).

"The latest version not only converts *MacPaint* files to *Geos*, it also converts *Geos* files to Mac."

Thanks Old Mike, and as luck would have it, *MacAttack II* has arrived in my mailbox in the last few weeks. It's a

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Susan's Message Board. "Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skillful execution; it represents the wise choise of many alternatives."

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shareware program, and is available on the Talisman BBS. I'm also including it in a shareware *Geos* disk compilation, details at the end of this column.

Geos and Hard Drives

There's been a lot of noise raised about Geos and the various hard disk drives available.

Creative Micro Designs (CMD) is the major player in the *Geos* and hard drive stakes, and the support they're coming up with for 64 and 128 users is phenomenal, considering that every year for the last five years has been the LAST YEAR (according to rumour) that you'd see the 64 for sale. And there's no doubting their commitment with some very serious products to play with.

As mentioned earlier, there's the RAMLINK, a power backed interface and expandable RAM disk, which operates on its own external power supply, so it never loses its RAM contents. It's *Geos* compatible and fully supports the use of GeoRam 512. CMD claim it's fast (up to 400 times faster than a 1541, but then so is my beat-up Nissan Pulsar), has built in JiffyDOS plus a parallel interface to speed access to CMD hard drives.

There's also *Gateway*, the much hailed replacement desktop environment for *Geos v2.0* users. I only had a short burst of hands-on time with *Gateway*, and it failed to live up to my expectations.

I found it slow to load, and very fiddly to configure for use with GeoRam 512, however I'm told by Rod Gasson from Karratha, WA, that the reason is, and I quote, "You were obviously loading from a 1541 disk drive (was it so obvious?) without JiffyDOS installed. In order to make *Gateway* work with the many different devices that *Gateway* supports it was necessary for them to bypass the *Geos* turbo routines. Booting from a 1571, 1581, hard drive, ramdrive or JiffyDOS equipped 1541 is pretty darn quick. (in fact *Gateway* is the only method of being able to boot Geos from a RAMdrive or hard drive)."

Thanks Rod, and I guess it really depends on the environment you want to work within. I personally prefer the regular *Geos v2.0* desktop to the *Gateway* desktop because of its sheer simplicity, but then of course I don't have a set-up like Rod's. His Commodore 64 is currently sporting two CMD 40 Megabyte hard disk drives, two Commodore 1571 floppy disk drives, a Commodore 1750 RAM expansion unit, and CMD's RAMlink with 1 Megabyte of RAM. Whew! I would have thought you needed a V8 to drive that lot!

Rod tells me also that he prefers *Gateway* due to the fact that he can access all six devices (three at a time) from it, while *Geos v2.0* can only access two devices at a time.

What Value Geos?

The next letter takes me back to basics. Ken Smith of Aldgate SA writes:

"My main problem is a lack of information. I've got a C64, 1541-II disk drive and a 1230 printer. I use *Superscript, Newsroom* and *Print Shop* to produce newsletters and A4 bulletins by literally 'Cut and Paste'.

"My questions, therefore, centre on the value in moving to *Geos* software. For example, without other *Geos* products, the disk I got with my disk drive seems a good advertising ploy, but of little practical use. What is the difference between *Geos 64 v2.0* and *GeoWrite* or are they the same thing? Can any of the software I have be used with *GeoPublish*? What fonts come with *GeoWrite* or *GeoPublish*, given that *GeoFont* and *Geos International Fonts* are advertised as separate packages?

"Your February article mentioned "Graphics Grabber from the Deskpack". What is this? Finally a question which flows from the above - are you aware of a *Geos* stockist in the greater Adelaide metropolitan area?"

AS: Now there's a man who knows how to ask questions. Okay Ken, taking them sequentially, you mentioned the version of *Geos* that came with the disk drive. This is *Geos v1.5* and is really no more than a demonstration of the system's capabilities.

If you want to get away from physical 'Cut and Paste', and you produce newsletters, then I recommend *Geos* to do the job. The difference between *Geos 64 v2.0* and *GeoWrite* is chalk and cheese. *Geos* is the operating system, the get-up-and-go for your computer. *GeoWrite* is the word processor application, as *GeoPaint* is the graphics design application, *GeoPublish* the desktop publishing application, *GeoFile* the database.

The word processing software you currently have (*Superscript*) CAN be used with *GeoPublish*, but you would also need another little program called *Text Grabber*. This is on the *GeoWrite* disk that comes bundled with *Geos v2.0*. *Text Grabber* literally grabs your *Superscript* document and converts it to a form that *GeoPublish* can cope with. You can then enter the document as a *GeoWrite* file and convert the text to whichever font you like ...

Which brings me to your next question about Fonts. There are four fonts that come packaged on the *GeoWrite* disks, California (a sans-serif typestyle), Roma, Cory (a computer typestyle) and Dwinelle (Old English), *GeoPublish* has much the same font files, however special versions that can be used in conjunction with a LaserWriter.

The other additional packages such as *International Font Pack* and *FontPack Plus* are disks with around four dozen other specialist type fonts for more exciting finished printed presentations, and yes, there are some beauties. There are also a number of third party suppliers with *Geos* type Fonts such as RUN in the USA and a number of the Commodore User Groups.

Graphics Grabber is a special utility application on the disk called *Deskpack Plus*. It can be used to import graphics across from your *Newsroom* and *Printshop* disks to *Geos* "Photo Albums", these graphics can then be used within *Geos* applications.

As for a *Geos* supplier in Adelaide, sorry Ken, can't help you there, however Logico in Marrickville, NSW operates an excellent Mail Order system, as does Computermate, the distributors of *Geos*. I have tried both organisations, and no problems at all.

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Victoria, a bit of *Geos* Public Domain assistance.

"As has been noted in the Geos Column there IS a lot of very useful PD software around for use with *Geos*. I contacted my local user groups from the listings published in the ACAR and as well as access to heaps of software (about 10 disks with both sides full - much of which was downloaded from Q-Link in the States), I also made friends with other *Geos* users who subscribe to US newsletters and are in contact with software developers there.

"I was so pleased with the results I was now able to get from my system, that I lashed out and invested in GeoRam 512 and a mouse which combined to make my system a pleasure to use."

AS: Fantastic Paul, it's great to hear so much enthusiasm for a great little computer and operating system. Thanks, by the way for the details on the Laser Matrix editor (a way of modifying printer drivers to give an enhanced finish to *Geos* documents produced on dot matrix printers) and *GeoStamp* (a music writing program), we'll take a look at those in next month's issue.

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C.U.G. (A.C.T.) INC.

I also received a newsletter, from the Commodore User Group (A.C.T.) Incorporated, which shows that Commodore-ing is alive and well in the nation's capital. The user group has a membership of 322, and is still looking for new members. If you're a Commodore user in Canberra and surrounds, give Matt Blydenstein a call on (06) 281 2714.

The C.U.G. Newsletter is created with *Geos 128* on a Commodore 128D, 1571 disk drive, GeoRam 512, using *GeoWrite, GeoPaint* and Paint Drivers, and printed on a Citizen 120D printer using the *Geos* printer driver for the EX800 Y3.4.

Interesting newsletter too, 20 pages of information about what's happening for the local users, not only the ones that use *Geos*, but also Basic v2 and v7 users. They include disk specials, including the *Geos* Q-Link disks and *Printmaster Graphics*, for some pretty good prices.

There's also a couple of pages about diagnosing faulty IC components on Commodore computers and accessories, a tips page about Printer Ribbon blues and a neat idea for a height-adjustable computer table.

Shareware

I mentioned earlier in this column that certain shareware programs are now available for *Geos* users. Shareware, in case you're new to the term, is a freely distributed program which carries the name and address of the author and relies on your honesty to send him/her a nominal figure, usually $5 or $10 in exchange for you keeping the program.

Some of the Shareware now available on the Talisman BBS includes ...

LASER MATRIX - a powerful editor for creating high quality *Geos* printer drivers.

GEOMIMIC - a puzzle game in which you must duplicate a series of tones in the correct order (Simon Sez).

FONT DUMP III - a utility that will output a sample of your available fonts to the printer.

SCRAP IT! - converts between all the most popular paint programs and *GeoPaint*.

DRAW POKER - a casino style poker machine.

GEOMONITOR - a machine language monitor for the *Geos* environment.

ANALOGCLOCK - for those of you sick and tired of digital clocks.

MAC ATTACK II - converts Macintosh graphics to *GeoPaint*.

GEOSLIDERS - slide the numbered tiles into the right order before your brain goes numb.

FONT MACHINE - a font design program.

GEOLIST - creates disk catalogues.

UNLOCK - point and click to unlock all files on a disk.

QUICK TOP - a desktop replacement program.

NOTEPRINT - accesses and dumps your notes written in the Notepad utility to printer.

Most of the shareware has documentation included, and plenty of on-screen help. Now, if you don't have a BBS, you can order both disks from me, send a cheque or money order for $10.00 made payable to Arthur Stevens (to cover costs of disks, postage and duplicating), c/- the ACAR and expect a turnaround time of about three weeks.

How to Contact Me

Thanks for your letters, keep the demos of your *Geos* work coming, and of course, if you have a problem with any of your Geo-goodies don't hesitate to drop me a line, at the Geos Column, c/- ACAR, PO Box 288, Gladesville, NSW 2111, or by Electronic Mail on the Talisman BBS (059) 44-4061.

That's it for another month, so until the new financial year, or July, whichever comes first, keep on rocking. Catch Melbourne radio listeners out in the traffic with the Wake Up club on Gold 104 FM (Mon to Fri 5:30am to 9:00am).

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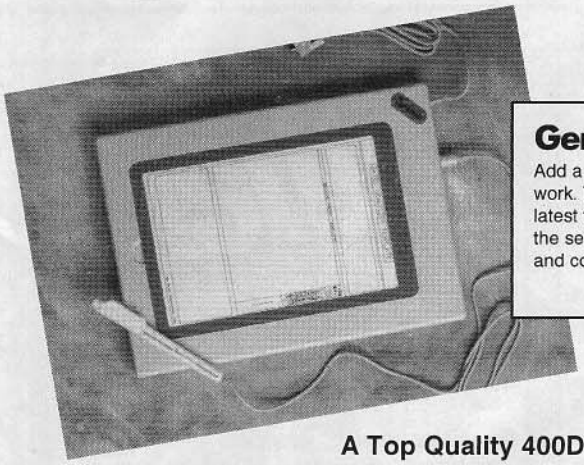

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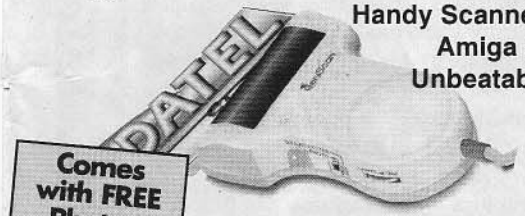

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Analyticalc - Power spreadsheet package

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Text Editors - Az, UEdit, QED, DME + Text Editors Guide

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Communications

NCOMM 2.0 - Latest release - AREXX/SCRIPTing/BBS and more!

Desktop Publishing

Fonts are suitable for PageStream 2.x or Professional Page 3.x. Will print to dot matrix or laser printer.

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DTP Fonts 2 - Adobe Type 1, Manzanit, Miami, Muriel, Park Have, Pixie, Play Bill, Polo, Richard, Roost, Saint, Sanser, Shark, Style, Toulouse, UpperWestSide, Windsor, Zalesk

DTP Fonts 3 - Adobe Type 1, Crackling Fire, Orbit, SerachLight, Gothic Shadow, SteelPlate, Premium Thin, Smoke, Titoretto, Middleton, Psychadelic

DTP Fonts 4 - Adobe Type 1, AarCover, Draftsman, LiquidCrystal, Medusa, BirghtonBold, Fontier, Logger, Caveman, Hot Dog, LowerEastSide, Qubist

DTP Fonts 5 - Adobe Type 1, AliceInWonderLand, Dubiel, PigNoseTip, Cardiff, Rothman, DominoEffect, Elwood, Xochiquetcal

Clip art is black and white IFF images suitable for any paint program or DTP package.

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Clip Art 3 - Animals, Computers, Dwellings, Fantasy, Food, Plants, People, HouseHold, Merryment, Business

Education

Education 1 - Elements, Draw Map, Rubik, Space Log, Gears

Education 2 - Gravity Well, Planets, Life Cycles, Orbit, Enigmas, ZPlot

Education 3 - Word Puzzle, Crossword, Word Game, A-Solve, POWER LOGO!

Chemistry - Create 3D models of different molecules

Emulation

Atari Emulator - German Only

MS-DOS Emulator - Transformer - Original PC Speed. Require MS-DOS System, No Graphics! - INCLUDES DEMO OF PC-TASK!

C64 Emulator - Run C64 Program, Interface C64 Peripherals (opt. interface available from U.S.A. Only)

Graphics and Animation

Graphics 1 - Still Store: For sequencing stills for video production

Graphics 2 - Mostra, ImageLab, TitleGen, sMovie, ABridge, SceneGenDemo, SlideMaster

Graphics 3 - Icon-Editor, Turbo Title, Cyro-Animation Utils

Graphics 4 - FreePaint, Graffiti, PED, PicBase - IFF Database

MandleBrot Tools - Six Disks, Create amazing shapes and patterns!

Music and Sound

Med 3.1 - The best Amiga low-level sequencer - some MIDI support

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Sound FX 1 - Filled with short, sweet samples - Bells, Horns, Dogs.. etc

Remix 1 - Two remixed music samples - Madonna and Black Box

Tracks 1 - 1733, Agression, Angies, Arkenoid, Atmospheric, AxelF, Azeirev

Tracks 2 - Beat, Benny, Biochal1, Biochal2, Blue Days, Blue Moon, Boss, Call Me, T.C.S.

Tracks 3 - Cloud Song, Creation 2, Crockets, Ear, Electric Dreams, Last Ninja II, Megaforce, Metal Synth

Tracks 4 - Oxygene, Piano-Plink, PopCorn, RSI-Hard, Skylight, Smoke, SupeBASIC, Tocatta

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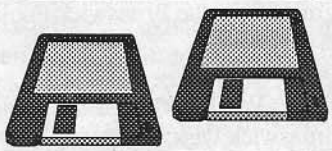

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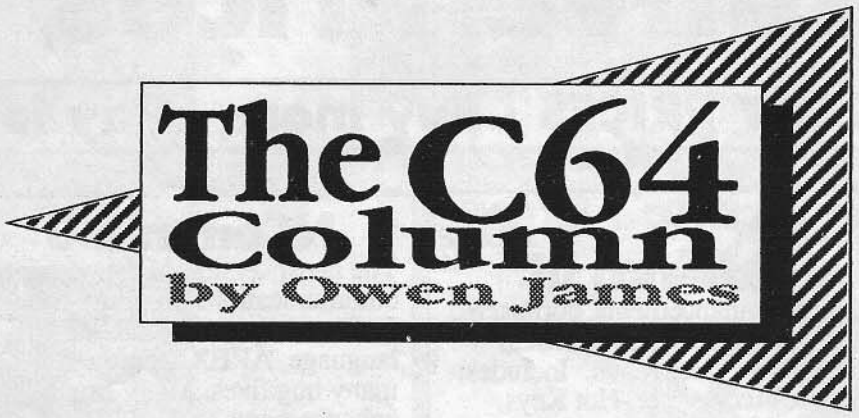

by Owen James

GeoPD

For *Geos* users that have been enquiring, geoPD Volume Two is now available. This double-sided disk is packed with even more programs and utilities than the first. To order your copy, send a six dollar cheque or money order made payable to Owen James to The C64 Column, PO Box 288, Gladesville 2111. Please allow up to three weeks for delivery.

Plus4/C16 User Group

For Plus4 and C16 readers, PLUG would like to hear from you. The Plus4 and C16 Users Group produces a monthly newsletter and has a library of over forty public domain disks for members to purchase. If you're interested contact the PLUG publicity officer, Tony Ellis, by writing to 36 Western Ave, Blaxland NSW 2774.

Gong Club

C64 Developments (Incorporated), also known as the C64 and C128 Club of Wollongong, meets on the 2nd Friday of each month at 7:30pm at the Nareena Hills Primary School, in Jacaranda Ave, Figtree. They have a huge lending library of software, books and magazines. For more information you can call Jeff Gale on (042) 715 098 or Rudi Tomajka on (042) 849 033.

New PD

This month in our public domain update we take a look at two Australian programs from the Brunswick Publications catalogue.

Name: World Information Service
Brunswick Disk: 110A & 110B

World Information Service is by Australian Kerry Lowe of Anneka Software. This twin disk set is an excellent information resource system. It's a database of facts and figures on the different countries of the world. Type in a country's name and it will produce a report giving details such as capital city, population, language, currency, size, dominant religion and national anthem. It will even display a world map to show roughly where in the world that country is. A mammoth amount of work has gone into World Information Service, and the result is an excellent resource system that would be at home in any software library.

Name: Jigsaw
Brunswick Disk: 94

An electronic jigsaw puzzle programmed by Australian Dennis Asher. *Jigsaw* will load and display one of several high resolution images before dividing the screen a user-defined number of times and rearranging the pieces. This is one jigsaw puzzle that WON'T be knocked off the coffee table moments before positioning the last piece! This program will also allow you to print any of the nicely drawn pictures that are included to a variety of different printers.

Software supplied by Brunswick Publications, PO Box 458, Bondi Junction NSW 2022, telephone (02) 389 7139. Disks from Brunswick are $5.00 each, and the *World Information Service* is $5.00 total for the twin-disk set.

Mail

Demo Programs and PD

Brian Reid, of Penrith NSW, writes:

"Dear Owen, I love your C64 Column. There's nothing quite like it in Australia. You mentioned that you were going to review some C64 public domain software. Great! This is a long overdue necessity in my opinion. Can you publish addresses of reputable C64 PD software firms please?

"On page 40 of the April ACAR mention is made of two Amiga demo maker programs called *Rainbow Writer and Space Writer*. Is there anything like them for the C64?

"Finally, do you know anything about *Saracen Paint*? If so, how can you save files as stand alone pictures? You can convert them to Koala format (what's that?) but these won't load from BASIC either. It looks like the program is a useless toy if I can't save the work for later use. I hope you can help on these questions."

OJ: Glad to hear you like the column. There are a few PD software companies around.

Brunswick Publications has an extremely large range, in fact they supply the PD software you see reviewed in the column. You can contact them at PO Box 458, Bondi Junction NSW 2022 or by phoning (02) 389 7139.

Allen Crouch is another supplier of C64 PD. You can contact him at 29 Happ St, Auburn NSW 2144.

Island By Mail has recently been offering the Legend collection, consisting of eleven disks for $99.50 plus $3.50

for postage and handling. At just under $10.00 per disk, this offer sounds a little over-priced to me.

There are some very good demo writing programs available in the public domain. It's just a case of finding a source for them.

Saracen Paint? Never heard of it. There are only a few art programs that allow you to create a stand-alone executable picture file. My *OCP Art Studio* has a separate utility it uses to load and display images, but it's just that - a separate utility. Koala is another image format used with the *Koala Paint* program. It's one of the more popular formats and has many auxiliary utilities available for converting to *geoPaint* and other paint packages. Can anyone help Brian out with some more info?

Hardware Projects

Andrew McCallum, of Ballarat, writes:

"Dear Owen, I would like to ask for help in finding information on the construction of computer hardware for the C64. This could be in the form of books, schematics or old 64 magazines. I would be interested in buying old computer magazines for the 64, especially the magazine *Your Commodore* from the June 1985 issue. These editions contained program listings, schematics and descriptions on how to build various hardware items. Of special interest to me is the construction of RAM/ROM expansion and how to link two 64's via the User Port.

"I would also like to find copies of the following: *Inside Commodore DOS, 1541 Users Guide, Mapping the Commodore 64 & 64C, The Official GEOS Programmer's Reference Guide, Electronics Projects for your Commodore 64 & 128.*"

OJ: If anyone out there has any information, or have any of these books that they no longer require, you can write to Andrew direct at 603 Urquhart St, Ballarat 3350 or phone him on (053) 315942.

CMD Hard Drive

Peter Hand, of North Rocks NSW, writes:

"Dear Owen, Congrats on your column over the past years. I have found it very informative and helpful in my adventures in C128 programming. Recently I have begun to see that my resources on the 128 are extremely time consuming and tedious to work with. I thought that perhaps the CMD hard drive could be the answer for this as it can hold vast amounts of data (20 or 40 megabytes) and is perfect for the amount of software I have and use on a regular basis. ACAR did a review on this a few years ago, but I would like to hear your opinion on this before I make my decision.

"Secondly, just recently I have taken

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an interest in bit-mapped graphics and would like to know if there is a commercial product on the market that lets me create a picture and then downloads this into BASIC. *Animation Station* does this but it takes up a lot of disk space (41 blocks) and is not very economical. I've heard that BASIC 8 is a worthwhile investment.

"Finally, I know this is an extremely far fetched concept, but is there any way to convert Amiga or IBM programs to run under the 64 environment if the right memory was supplied, or is there an IBM or Amiga emulator fitted to the C64/128?"

OJ: I've heard nothing but glowing reports about the CMD hard drive. They can certainly make life easy. Perhaps the only catch is the price. The 20-meg version is somewhere around $1100, steep when you consider an Amiga 2000HD which includes a 52 meg hard drive is currently available for around $1395. Still, if you're serious about your C128, a hard drive is the only way to go.

I'd be very surprised if you could find a utility to convert a bitmap to BASIC in less than 41 blocks. If my memory serves me correctly, 41 blocks is about the size of a standard *OCP Art Studio* image file - without BASIC conversion.

Amiga emulation was something *Zzap*! magazine had fun with a number of years back. They ran a special 'Stop Press' feature claiming a prototype version of an Amiga emulator had just arrived. They claimed some ingenious technician had developed an expansion cartridge containing the three all-important Amiga custom chips.

It was of course an April Fool's stunt that had many believing it was true until they ran a follow up the next month.

No, the Amiga can't be emulated by a C64. There are many reasons for this, the main one being that they use totally different processing units.

An emulator would also need the Amiga custom chips to make any serious attempt at running software, and a huge memory boost. In short, any emulator would consist of a complete Amiga motherboard, which really defeats the purpose of an emulator.

Joystick BASICs

Trent Yarwood, of Ocean Shores NSW, writes:

"Dear Owen, I would just like to congratulate you on your past work in the GEOS and C64 Columns in this predominantly Amiga-biased magazine. Your work in the magazine is the coverage that I subscribed for. I am not objecting to wading through pages of Amiga coverage, but would like to see a bit more of our favourite computer. I enjoyed your subroutine library and would like to see more of them in the future.

"I am beginning to dabble in the art of sprite designing, and wrote to ask your advice in controlling them. I have written a joystick (port one) movement routine, using the characters that the port one joystick prints on the screen when you move it, using the fire button as up. Could you please give me some advice on how to do this, or tell me where to find it.

"One of my friends has asked me to ask you where he would be able to find a 1581 (3.5") disk drive as he wants to use it with *Geos* V2.0."

OJ: Well, as you've probably guessed, there is an easier way than trying to read the characters. The simplest way is to check address 56320. This will hold values depending on the state of the joystick. Here's a very short example:

```
10 JY=(PEEK(56320) AND
PEEK(56321)) AND 31
20 IF JY=30 THEN Y=Y+10 :
REM UP
30 IF JY=29 THEN Y=Y-10 :
REM DOWN
40 IF JY=27 THEN X=X-10 :
REM LEFT
50 IF JY=23 THEN X=X+10 :
REM RIGHT
60 IF JY=15 THEN PRINT
"FIRE!"
70 GOTO 10
```

This short example will scan for events from both ports at the same time. You can easily detect diagonal movement from the joystick by checking the value of JY after such a movement to find the value. With this routine it becomes a simple task of just incrementing and decrementing your V and V+1 registers for movement (where V equals the base value of 53248). Just experiment with this routine and your sprite program.

1581 drives are very hard to get hold of here in Australia. For some unknown reason Commodore out here decided against bringing them in. At the moment I'm waiting anxiously to see if the TIB 3.5" unit will take off, and if it will ever be likely to offer *Geos* support. So far, Ocean Software are giving it enthusiastic support, but most other software publishers are playing a cautious game of "wait-and-see". I wonder if anyone has any plans to bring them into Australia, hmmm?

You might remember that back in March I answered a question about coding a smooth scroll in BASIC. You might also remember that I replied that BASIC isn't fast enough to do smooth scrolling. I was wrong - something which doesn't happen often, I know, but I'll be big enough to admit it!

It IS in fact possible to create a smooth scroll in BASIC, with a few tricks of course. Marc Walters has sent me a routine he has coded in BASIC which will smoothly scroll the top line of the screen while keeping the lower 3/4 of the screen rock-steady. He has used some quite unusual tricks for the timing, but it works. Marc also tells me that Robert Alyari, who recently enquired about C16/+4 software, might like to know that Korella Trading at Belmont, and Quickstart Software (a mailorder software business in Sydney), both still supply C16 and Plus4 Commercial and PD software. Thanks to Marc for so cheerfully showing me to be wrong.

Tips and Tricks

Memory Fill

One of the most annoying things about BASIC is the length of time it takes to clear bitmap images etc. This

machine language Fill Memory routine will fill a given portion of memory with any desired byte. This is useful for screen effects, especially where speed really counts. The ML can be relocated anywhere you like. The format for using this routine is:

```
SYS SA, MEMORY START, MEMORY END, BYTE

For example:
SYS 52992, 1024, 2024, 32 : REM FILLS THE
SCREEN WITH SPACES
SYS 52992, 54272, 54300, 0 : REM CLEARS THE
SID CHIP
SYS 52992, 55296, 56296, 1 : REM MAKES ALL
THE ON-SCREEN TEXT WHITE

10000 REM *** ML FILL MEMORY ROUTINE ***
10010 SA=52992 : CK=0
10020 FOR B=SA TO SA+77 : READ C : CK=CK+C :
POKE B,C : NEXT B
10030 IF CK <> 12069 THEN PRINT "DATA ERROR"
10040 DATA
32,253,174,32,138,173,32,247,183,166
10050 DATA
20,164,21,134,252,132,253,32,253,174
10060 DATA
32,138,173,32,247,183,166,20,164,21,134
10070 DATA
254,132,255,32,253,174,32,138,173,32,247
10080 DATA
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10090 DATA
7,165,252,197,254,208,1,96,165,247,162,0
10100 DATA
129,252,230,252,165,252,208,2,230,253,24
10110 DATA 144,226,225
```
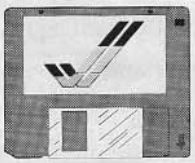
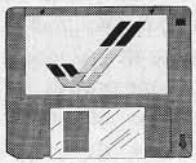

- Nigel Stewart, Geelong, Victoria.

Well, that just about wraps up the column for this month. As always I'd love to hear from you. Send your tips, tricks, questions and suggestions to me care of The ACAR, PO Box 288, Gladesville 2111. Don't forget to include your name, address and fax number where possible.

I'll be back next month with all the latest news and views. See you then.



Discounted Software



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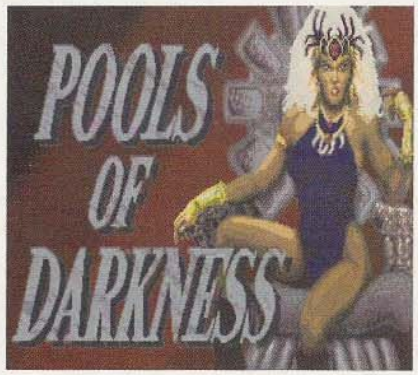
Phil Campbell's MEGA Entertainment

All the latest news and views from the world of entertainment

Pools of Darkness Final Chapter In AD&D Gold Box Series

Electronic Arts and SSI have just released the last chapter in the AD&D Gold Box series. Named for their distinctive - though boringly similar - gold boxes, the AD&D series lets you explore and protect the "forgotten realms" from the dreaded Bane. *Pools of Darkness*, the final chapter, features more of the same. Characters from previous games, like *Secret of the Silver Blades,* can be transferred to the new game with their levels, money and items intact.

SSI, who produced the game, is rated among the top five Fantasy Game producers in the USA. Thousands of players around the world have revelled in their games - and I, for one, haven't got the faintest idea why. The Amiga version of *Pools of Darkness* retails for $69.95.



Fire and Ice From Braybrook and Turner

Graftgold's sequel to *Rainbow Islands*, called *Fire and Ice*, is being produced under the watchful eye of Andrew Braybrook and Steve Turner. Braybrook keeps getting better and better - anyone remember his brilliant C64 titles from back in '86?

ACAR Entertainment Hints Disk Still Available

Looking for help with your favourite game? Chances are, you'll find help on the ACAR Entertainment Hints Disk. There are hints and tips for hundreds of games, together with maps and full solutions crammed onto an Amiga disk so full that there's not even room for a single extra byte of data.

How do you get your copy? Simple. Just send a blank Amiga disk, a stamped, self addressed envelope (large enough for the return of the disk) and a cheque or postal order for $5.00 to Phil Campbell, PO Box 23, Maclean NSW 2463.

There will be copies available at the World of Commodore show too - why not drop into the ACAR stand and say "hi"!

Mirrorsoft Acclaim - Ed

Our ever watchful roving reporter Andrew Gormly tells us that UK games house Mirrorsoft was on shaky ground after the well publicised death of owner Robert Maxwell. (No Bob-Bob-Bob Maxwell jokes here, you'll notice. This is a quality magazine.) Now, however, US console giant Acclaim has bought the company, planning to reconfigure a number of Mirrorsoft games for the swelling Nintendo market.

Mindscape Paragliding Competition

"At least this one's got plenty of letters," said Mindscape's Richard Treloggan as he offered a massive eight copies of Loriciel's *Paragliding* for our monthly Mindscape competition. Mmmm. Our Word Jumble puzzles must be getting a bit predictable! Trouble is, everybody seems to like them - so let's do it again.

So if you've always wanted to go hang-gliding but you've never had the guts, now's your chance. All you'll need is an Amiga to play it on if you win, a big sheet of paper, and a pencil. What do you have to do? Simple. Just make as many words as you can out of the letters PARAGLIDING, write them down and send them in. Scrabble rules apply, so no funny business, okay?

Write the total number of words you've found on the back of the envelope when you mail your entry, together with your name and address. On the front, write Mindscape June Competition, c/o Phil Campbell, PO Box 23, Maclean NSW 2463, stick on a stamp, and put it in your nearest letterbox. Australia Post will do the rest!

Be quick - the competition closes at the end of the month.

EA Champions Competition Winners

It's Olympic year, and Electronic Arts are celebrating with the biggest give-away of all time. Were you one of the lucky winners in the April competition? Read on and find out, because here are the 25 lucky prizewinners:

David Bunn, PO Box 140 Maryborough Vic 3465 (Amiga), Justin Hurst, Carlton 2218 NSW (Amiga), Philip Flaherty, Lane Cove NSW 2066 (Amiga), H.R. Miller, Stuart Mill, Vic 3478 (Amiga), Matthew Pope, Lyons ACT 2606 (Amiga), Debbie Battle, Reynella SA 5161 (Amiga), Elizabeth Buchanan, Orange NSW 2800 (Amiga), Stewart Evans, Fairy Meadow NSW 2519 (C64), Ricki Beer, Nth Richmond Vic 2754, Mark Gilkinson, South Grafton 2461 NSW (C64), G. Cook, Wulguru Qld 4811 (Amiga), Antoinie Vavier, PO Box 708 Albany WA 6330 (Amiga), Jason Beavan, Gorokan NSW 2263 (Amiga), Barb Jones, Padbury WA 6025 (Amiga), R. Tehan, Newcomb Geelong Vic 3219 (Amiga), A. Gibson, Wishart 4122 Qld (Amiga), N. Garrett, Cranbrook 4814 Qld (Amiga), Gary Roberts, Essenden, Vic 3040 (Amiga), G.R. Shalders, PO Box 609, Clare SA 5453 (Amiga), Ken Hunter, Werrington County 2747 (C64), P & J Collins, Mortdale NSW 2223 (Amiga), Adrian Scott, Mt Colah NSW 2079 (Amiga), Wayne Clacherty, Keperra Qld 4054 (C64), Carmen Smith, Caboolture, Qld 4510 (Amiga), Cliff Balsden, Morley WA 6062 (Amiga).

Your prizes are on the way, courtesy of Electronic Arts - have fun!

Mindscape April Winners - Videokid

In our April competition we asked you to nominate your three favourite games of all time - not nearly as difficult as our usual word games, yet we got half the usual number of entries. What's up? Too easy? Anyway, here are the results.

The most popular game of all time is *Lemmings*. Second comes *Secret of Monkey Island*, and third most popular is *Wings*.

So here are the five lucky winners, who each win a copy of Mindscape's excellent *Videokid*.

1. Darren Healey, of 75 Cox St South Windsor NSW 2756.

2. The Escalante family, of 4/31 Park St Como WA 6152.

3. Robbie Baker, of RSD 19, Boort Vic 3537.

4. Jon Fitzgerald, of 17 Bermuka St, Moonah, Tas 7009.

5. Andrew Hay, of 10 Finschafen St, Mt Isa, Qld 4825.

Congratulations to you all, and thanks to Mindscape for the prizes.

Entertainment Letters

Got a question? Better still, got an answer? Or maybe you've got a comment on your favourite game? Then don't just sit there reading - drop us a line. In just a few short months, you'll see your name in print, and you'll be famous! Wow! And better still, your questions will be answered, your answers will be questioned, and your comments will be chewed over by gamers all over Australia - and beyond. Sound cool? Then send your entertainment letters to Phil Campbell, PO Box 23, Maclean NSW 2463.

Winning the Drive Wars

Dear Phil, No matter how hard I try I can't get past the fourth stage in *Drive Wars*. (The stage with land mines everywhere). In the bonus stage. I either get killed by those funny looking things or land on a bunch of mines in the fourth stage. I would be very grateful if you or another reader could send some kind of cheat mode to: R.M.B 8610 Molesworth Tasmania 7140.

Michael Seymour
Tasmania

Ed: *Sounds painful, Mike. We've*

spread the word, so perhaps some kind reader will be able to help. All you tipsters out there can either send your hints direct to Mike, or to me if you want a little fame and glory.

Hi From a New Reader

Dear Phil, I'm a relative newcomer to ACAR, and I'm rapidly discovering I've been missing out. The magazine has helped me immensely, and I've been recommending it to all my fellow Amiga users. I have some hints and tips your readers may find helpful - I hope you can use them.

Denis Fitzgerald
Golden Square, VIC

Ed: *Thanks for the letter Denis, and welcome aboard. We're proud of the fact that we're a quality magazine - and the fact that you get more hard information for your dollar from ACAR than almost any other computer magazine in the world. Keep on spreading the word - and thanks for the tips. You'll find them printed in this month's hints and tips section. (I didn't mention your disk swap offer, because I don't think DiskMaster is public domain - check it out and write to me again!)*

Arcade Queries

Dear Phil, Can you tell me specifications of a typical video arcade machine (ie, screen resolution, colours, processor speed etc.) Can you also tell me about some specs of the popular home computers like the Amiga 3000, 2000, 500 and the IBM 386 and 486, Nintendo, Sega etc. Thanks.

Michael Ufra
Doveton, Vic

Ed: *Sorry, Michael, I don't carry that sort of stuff round in my head. Maybe we'll get one of our techie experts like Andy Phang to research a special feature comparing the latest and greatest game technology. (How about it Andy?)*

In the meantime, in spite of rumours of Amigas stuffed in cabinets running arcade games, you can rest assured that most of the latest arcade games run on multi-processor machines that run pretty darn fast. The Amiga 500 and 2000 both run at a pretty meagre 7.14MHz. I'm running an Amiga 2500, which Nic Wilson's SYSINFO program tells me runs 3.78 times as fast as a standard A500, 0.43 times as fast as a standard Amiga 3000, and 0.14 times as fast as an A3000 with a Progressive Peripherals 68040 board.

It's hard to compare with IBM compatibles, because even though they sound fast (my 386 runs at 25MHz, most 486's clock in at 33MHz) they don't have the Amiga's custom chips to move large chunks of graphic data - this effectively slows them down.

Hints Disk Upgrade

Dear Phil, Could I please have a copy of the updated Amiga Hints disk - also, could you please tell me how to get a copy of the original Amiga Hints disk? Is it important, or does your updated hints disk cover everything?

Stephen Mew
Boonah, Qld

Ed: *A copy of your Hints disk is on the way, Stephen. You won't need the original disk, because everything is included in the upgraded version. We've simply jammed on more hints, and upgraded the interface so that everything is slick and easy to use.*

Remember, you can order your ACAR Entertainment Hints Disk by sending a blank Amiga disk, a stamped self addressed envelope and a cheque or money order for $5.00 to Phil Campbell, PO Box 23, Maclean NSW 2463 - or see me at the ACAR stand at this year's World of Commodore Show.

Indi Hints Wanted

Dear Phil, In my *Indiana Jones and the Last Crusade* game (Amiga 500), I don't know how to get past the ropes in Level 1 with men climbing on them. Could you please help me with the answer? Keep up the good work on the magazine. Thanks.

Simon Layne
Glenbrook NSW

Ed: *Stay tuned, Simon. I'm sure someone will find you an answer.*

Amiga Games Club - Members Wanted

Dear Phil, Could you please publicise the new Amiga Games club I'm starting. We're looking for inexperienced and new Amiga users with a thirst for knowledge. If anyone's interested, write to me at the address below.

Grant Maskell
PO Box 567
Fortitude Valley Qld 4006

Ed: *Consider it publicised, Grant - hope you get a big response.*

Don't be selfish - send your favourite Amiga hints and tips to Phil Campbell, PO Box 23 Maclean NSW 2463 and share them with everybody else. If you send them on a disk with a SSAE, we'll send you back a free copy of the ACAR hints disk. How's that for a bonus?

Indianapolis 500

Here are some tips from a guy who should know! Michael Glenville currently ranks as champion Indi Driver in the ACAR Hall of Fame, with a qualifying speed of 238.47 mph. Mike finds the Lola/Buick the quickest by far when set up correctly. He suggests using only one press of front wing, with the rear wing on minimum - he also advises using the mouse rather than the joystick for smoother control.

Dragon Breed

The mysterious Matt P, from Morphett Vale SA, says to pause the game by pressing P, then type IREM. Unpause the game, and now you can't be killed.

Shadow of the Beast

Also from Matt, hold down fire and the left mouse button on the Reflections screen until you are told to change disks. You now have unlimited lives.

Ivanhoe

Finally from Matt, when playing *Ivanhoe* simply pause the game and type in ZOBIDETTE. Now press "N" whenever you want to skip a level.

Lotus Turbo Challenge 2

Denis Fitzgerald, of Golden Square, Vic, adds the following hints to Graeme Beaven's advice in the February edition. For unlimited time, type TURPENTINE in the password box. Also, try typing DUX in the password box for a very strange *Space Invaders* game.

Robo Cop

Also from Denis comes a hint that I think we've seen before ... just before Robo encounters his first bad guy, hit Return to pause, then type BEST KEPT SECRET, then press the fire button - you'll have unlimited lives.

Hall of Fame

This month has seen quite a bit of action on the high scores front - it's goodbye to Damien Carsburg's long standing *Nitro* score, Andrew Gormly has more than doubled his previous *Operation Thunderbolt* score, and a few new games have appeared on the list. For some reason, there were no new C-64 high scores this month - keep them rolling in!

Send your authentic high scores to Phil Campbell, PO Box 23 Maclean NSW 2463. Please mark clearly whether your scores are for C-64 or Amiga.

And remember - NO CHEAT MODES ALLOWED!

AMIGA

ACTION FIGHTER 132,530 Robbie Baker
ALERT 359,700 Robbie Baker
ARKANOID 1,052,610 Steven Walter
AMAZED 130,500 Chris Turnadge
AXEL'S MAGIC HAMMER 329,800 A Buscumb
BAAL 134,250 Davo
BATTLE COMMAND 334,200 Peter Cain
BATTLE SQUADRON 99,999,999 (c) A Burbidge
BEYOND ICE PAL 67,626 (c) Chris Turnadge
BIO CHALLENGE 29,000 Aaron Sanderson
BLOCKOUT 65,281 Stephen Lark
BOMBJACK 382,310 David Dilkes
BUBBLE + 276,850 (c) Chris Toyne
BUBBLE BOBBLE 2,960,980 Kristy Cameron
BUDOKAN 6:08min (c) Mark Sorensen
BUGGY BOY 113,260 Powerhouse Nick
CAR-VUP 484,122 Happy Hacker
CHASE HQ 7,426,060 Powerhouse Nick
CONT. CIRCUS 4,815,390 Dolly
CRAZY CARS 93,622,590(c) Robert Cameron
CRAZY CRS CHALL 3,000,000,000! M Summers
CRYSTAL HAMMER 6,787,921(c) K Cameron
CYBERBALL 475,000 David Marsh
DENARIS 53,900 Peter Evans
DIABLO 1,490 Timothy Johnson
DRAGON NINJA 246,400 Rod Matthews
DOUBLE DRAGON 962,355 Robert Cameron
DOUBLE DRAGON II 187,830(c) D Carsburg
EDD THE DUCK 5,820 Andrew Gormly
ELIMINATOR 246,570 Greg Munro
EMERALD MINE Level 23 (d) Timothy Johnson
FLOOD 6,455 Embah Beaton
GEE BEE AIR RALLY 308,726 Robert Irwin
GIANA SISTERS 69,372 Robert Cameron
GODS 3,957,622 (c) R. Pitt
GOLDEN AXE 40.5(c) Kerry Adams
HYBRIS 2,345,355 Graham Wilson
IK+ 1,039,200(c) Powerhouse Nick
IMPOSSIBLE MISSION 66,380 Diane Unwin
IMPOSSIBLE MISSION II 67,900(c) D Dilkes
INDIANA JONES L.C. completed Phillip Nicoll
INDIANAPOLIS 500 37.74sec/238.47mph Michael Glenville
INERTIA DRIVE 33,190(c) Ben Toyne
KARATE KID II 54,000 Michael Summers
KILLING GAME SHOW 699270 D Thompson
KLAX 4,396,040 Happy Hacker
LEATHERNECK 66,500 Shane Crosland
LIVE AND LET DIE 96,520 Merekee Beaton
MAJOR MOTION 50,658 Owen Webster
MENACE 996,481 Kamikaze Andy
MIDNIGHT RESISTANCE 302,550 Lost name!
MINDWALKER 306,214 P Schumacher
MOUSETRAP 71,977 Davo Rich
NARC 180,800 Damien Carsburg
NINJA MISSION 66,528 Chris Toyne
NITRO 283,000 (c) Brett Bannerman
NUCLEAR WAR 920 (c) Matt James
N. Z. STORY 546,695 Embah Beaton
ONSLAUGHT 16,179 Andrew Gormly
OP. THUNDERBOLT 166,400 A Gormly
OPERATION WOLF 355,680 Graham Wilson
OUTRUN 26,331,122(c)Benjamin Moen
OFFSHORE WARRIOR 626,345 Jacob Booth
PACMANIA 3,250,140(c)Amos Burbidge
PINBALL MAGIC 332,390 Tracey Chilcott
PINBALL WIZARD 3,893,570 Stephen Hose
PIONEER PLAGUE 35,412 Keir Sooby
PLUTOS 299,000 Davo
POPULOUS 347,990 Michael Summers
PORTS OF CALL $3,654,944,000 Status 1033 Troy Clarke
POW 612,865 David Thompson
RAINBOW ISLANDS 9,999,999 (c) Tim Johnson
RAMPAGE 212,912 Graham Wilson
RICK DANGEROUS II 68,450 Scott Southurst
ROBOCOP 375,520 Michael Summers
ROTOX 183,050(c) Faye Doherty
SIDEWINDER 904,350 Sharon Elsley-Eades
SILKWORM (Heli) 9,963,360 (c) Rob Cameron
SILKWORM (Jeep) 2,369,571 Kristy Cameron
SKWEEK 3,375,400 Faye Doherty
SPACE ACE 22,140 Neville Clarke
SPACE HARRIER 210,855,250 Maverick
SPEEDBALL 17,650 Amos Burbidge
SPEEDBALL 2 394-2 Matt James
STARWARS 5,722,822 wave 33 C. Mingos
STRIDER 175,350 Nell Young
SUPER CARS 24 races David Thompson
SUPER HANG-ON 25,042,650 David Worthy
SUPER OFF-ROAD $350,000 Andrew Gormly
SUPER WONDER-BOY 87,190 J Stubbings
SWIV (HELI) 1,758,820(c) Scott Southhurst
SWIV (JEEP) 1,788,100 Steven McKinlay
SWORD OF SODAN 403,500 Steven Begley
TEEN.M.N.TURTLES 546,600(c)James Leeken
TERMINATOR II 53,968 (L6) S "Loopy" Hoffman
TEST DRIVE 131,076(c) Jordan Noglet
TEST DRIVE 2 659,992 Michael Summers
TETRIS 39,586 (774 Lines) Christine Lewis
TETRIX Level 232 Stephen Lark
THE RUNNING MAN 123,500 Daniel Rucci
THUNDERBLADE 2,034,040 De Moose
THUNDERCATS 522,300 Scott Southurst
TOWER OF BABEL 25,934 (c)Stephen Lark
TURBO OUTRUN 100,260,819 Matthew Mantle
TURRICAN 1,735,100 (c) Adrian Jenkin
TURRICAN II 2,779,100 (c) C "Link" Rose
TV-SPORTS BASKETBALL 192-39 Matt James
TV-SPORTS FOOTBALL 189-0 David McKinney
TWINWORLD 24,640 Carol Love
TYPHOON 54,255 Owen Webster
U.N.SQUADRON 762,255 (c) Tony Stojanouski
VIRUS 19,801 Scott Southurst
WHIRLIGIG 28,210 Nathan Allen
WINGS 432 kills Robert Irwin
WINGS OF DEATH 56,670 Robert Irwin
WONDER BOY 381,186,042(c) Kristy Cameron
XENON II 1,107,280(c) Mark Porta
ZOOM 67,051 Steve Jones

COMMODORE 64

ALLEY CAT 1,101,150 Simon Mitchell
ALTERED BEAST 312,400 Rick Zanker
ARKANOID 930,340 Joseph Wright
ARKANOID 2 756,250 Mean Max
BATMAN 521,360 The Joker
BATMAN-THE MOVIE 1,087,080 M Bradley
BANGKOK KNIGHTS 39,600 Josh Smith
BOMB JACK 521,820 Adam Wade
BUBBLE BOBBLE 6,963,930 (c) D Gavrilovic
BUGGY BOY 182,790 P Murray
CABAL 194,450 The Joker
CHASE HQ 11,366,900(c)Happy Hacker
CHASE HQ II 29,100 (C) Adam Wade
CREATURES 10,123 Adam Malinowski
DAVID'S MID MAGIC 669,150 The Joker
DOUBLE DRAGON 35,820 (c) Atul Prasad
DOUBLE DRAGON II 255,190 N van Heeswyk
DRAGON BREED 496,870 Happy Hacker
FAST BREAK 136 to 9 Chris Byrne
GHOSTS AND GOBLINS 325,600 Adam Wade
GHOULS AND GHOSTS 558,110 (c) A Wade
GIANA SISTERS 287,100(c) Adam Wade
GRYZOR 228,600 Mean Max
H. MARADONA Level M N. van Heeswyk
HAWKEYE 207,650 Adam Wade
IKARI WARRIORS 308,300 Jason Aldridge
INT. KARATE 139,300 Paul Millward
LAST NINJA II 19m05s (c) Marc Bell
MIDNIGHT RESISTANCE 28,540 (c) D Pike
MEGA GIANNA SISTERS 328,746 Mean Max
NEMESIS 1,633,200 Adam Wade
OPERATION THUNDERBOLT 78,600 A Annen
OPERATION WOLF 776,350 Winston Diaz
OUTRUN 16,952,780(c) Adam Wade
PARADROID 103,080 Chris Nilsson
PAPERBOY 103,100(c) John Nunes
PIRATES 143/100 D Steward
POWERDRIFT 872,940(c) Adam Annen
QUE-DEX 639 Chris Byrne
R-TYPE 1,890,210 Atul Prasad
RAINBOW ISLANDS 7,653,241 A Malinowski
RAMPAGE 180,000 Adam Wade
RICK DANGEROUS 66,280 Adam Annen
ROBOCOP 237,170(c) Adam Wade
ROLLING THUNDER 417,280 Adam Wade
SALAMANDER 235,300 Paul Millward
SHINOBI 664,372(c) Winston Diaz
SILKWORM (Heli) 965,200 (c) Adam Blanch
SILKWORM (Jeep) 244,500 (c) Adam Blanch
SKATE OR DIE Freestyle 22,850 The Joker
STREET FIGHTER(c) 168,900 Adam Wade
SUPER CYCLE 223,040 Andrew Gormly
TARGET RENEGADE 330,450 C. Byrne (clocked)
TEST DRIVE 36,144(c) John Nunes
TEST DRIVE II 249,543 (c) A Batroc
TETRIS 35,335 (459 lines) Adam Annen
THE TRAIN 9,500(c) Adam Annen
THUNDERBLADE 1,734,040 Troy Morrison
THUNDERCATS 269,500 Joseph Wright
T.M.N TURTLES 1292 Adam Annen
TRAZ 54,560 Dave and Sue Upton
TURRICAN 1,239,040 Adam Malinowski
UNTOUCHABLES 70,230 Simon Watford
WIZBALL 999,999 (c) G. Beaven
WONDERBOY 560,320 Happy Hacker

Scores followed by (c) indicate that the game has been completed.

MICHAEL SPITERI'S

Adventurer's Realm

Welcome, adventurers, to the Realm, the part of the magazine that offers you peace from sleepless nights.

What do you do if you are desperately stuck in an adventure or role playing game? Well, write to the Realm for one of our free hint sheets (check the list below), or drop a line to one of the many clever contacts that are based around the nation. If all else fails, write to the Realm and we'll print your problem among these pages so that thousands of adventurers can also lose sleep trying to solve it.

For adventure problems, help, tips, chat, rumours, gossip, complaints, write to: Adventurers' Realm, 12 Bridle Place, Pakenham, Vic 3810.

For problems and queries concerning role playing games, write to: Realm's Dungeon, PO Box 1083, Canning Vale WA 6155.

(Note the new Dungeon address!)

Always enclosed a stamped addressed envelope when writing to the Realm.

Free Hint Sheets

Kerrie, the Lady of The Realm, is ready and waiting to take all requests for hint sheets. Already doing the backstroke in last month's letters, she'll try her best to get them out to you pronto. To make things easier for her, make sure you enclose a stamped addressed envelope, and list no more than the four hint sheets you'd like. They must be from the list below. The address for free hint sheets is:

Free Hint Sheets, 12 Bridle Place, Pakenham Vic 3810.

Corruption, Pool of Radiance, Maniac Mansion, Zak McKracken, Indy, Zork 1, Zork 2, Zork 3, Bards Tale I, Bards Tale II, Bards Tale III, Guild of Thieves, Jinxter, Pawn, Fish, Uninvited, Deja Vu, Hampstead, Hitchhikers Guide, Faery Tale, Borrowed Time, Dracula, Never Ending Story Pt1, Hobbit, and the Clever Contacts Complete Listing.

Computer Adventure Games - Hints & Tips: The Second Official Adventurers Realm Hint Book

A delayed release meant that the book wasn't available until last month, so your newsagent should have copies in soon. If they haven't, then dob them in to Darrien on (02) 398 5111 (who you can also order your copy from).

This second instalment features hints and tips to over 25 adventure and roleplaying games, including *Sorcerers Get All The Girls, Kings Quest V, Space Quest IV, Pool of Radiance, Conquests of Camelot*, plus many more. Look out for the fat dragon on the front cover.

There are still a handful of copies left of the first hint book. Priced at just $9.00, it contains hints and tips to over forty classic adventure games. Contact Darrien to order your copy.

Top 10 Adventure/Roleplaying/ Strategy Games

1. Eye of the Beholder
2. Silent Service II
3. Bane of the Cosmic Forge
4. Castles
5. Might & Magic III
6. Space Quest IV
7. Secret of Monkey Island
8. Kings Quest V
9. Wonderland
10. Civilisation

Based on top sellers from Fountain Gate Pacific Microlab, and Maxwells Computer Centre. For Amiga and PC games.

Top 5 C64 Strategy Games

1. Last Ninja III
2. Sim City
3. Secret of the Silver Blades
4. Gunship
5. Might and Magic II

Chart supplied by Maxwell Computer Centre.

Realm's Adventure Chat

Matthew Armstrong of Geelong in Victoria writes ... "Would you recommend me buying *Loom*? All the other Lucasfilm games I've played and seen have been absolutely fantastic, but I've heard this one is too easy. Is that true?

"Also, could you do me the most biggest humongest massive favour? Could you please put a coloured picture or two or three of *Indy and the Last Crusade* in your next edition of ACAR. After all, ACAR is the best and kindest of all computer magazines."

MS: You'd be better off writing to Phil Campbell, cos he's more of a sucker when it comes to slurpy requests like yours, and *Indy* is a bit old hash for Adventurer's Realm. As for *Loom*, it's a completely different kettle of fish from games like *Maniac Mansion* and *Zak*, as it tests your musical prowess. I wouldn't call it easy, but others may disagree.

Daniel Cannon of Dubbo in NSW writes ... "I have the game ELF, and would like a hint sheet for it please. I have been having trouble with it, in that it won't save after the first level. I loaded workbench 1.3.2, and the message read: error validating disk, key 880 checksum error. When I clicked on cancel, the message read: disk structure corrupt - use diskdoctor to correct it."

MS: I'm afraid your disk is stuffed, as the term goes. You could try using diskdoctor (which is part of your workbench package), however your chances of repairing it without losing data are fairly slim. (*You'd have more luck with a specialised utility like QuarterBack Tools. Ed*) As for the hint sheet, maybe someone out there can help in this area.

Hint and tips have been flowing into the Realm lately. Many, many, many thanks to Stuart George of Springvale in Victoria for hints for *Ultima 6*, John Allen of Fernmount in NSW for a multi-game hint sheet, and finally, a big thanks to international tipster Peter Georges who continually sends in hint disks packed with hints and tips.

Richard and Ann Warren of 6 Park St, Thornlands 4164, would like anything to spark their interests in *Boulderdash* or *Emerald Mine*. New disks, stuff like that. If you can help, please write to them.

Finally, in the April issue I mentioned that Scott Le Brun is willing to give a copy of his latest adventure *Castle Greystone* for any ideas for AMOS adventure games. His address was supposed to read: 59 Brentwood Drive, Wantirna, Vic 3152.

Adventurer's Realm Clever Contacts

Clever Contacts are volunteers from all over Australia who will offer their assistance to troubled adventurers stuck in particular games. Remember to always enclose a stamped addressed envelope when writing to a clever contact, and also enclose sufficient funds for photocopy of maps and solutions. If you would like to know who the clever contacts are, write to Free Hint Sheets for a clever contacts listing, and keep your eye out for the January issue which will have an updated listing.

Peter Georges of 34 Arundal Park Drive, St Clair, NSW 2759 has hints for so many games that there is just no room to mention them here.

Andrew Malden of 29 Alkira Avenue, Geelong, Vic 3215 can offer help in *Monkey Island* and *Maniac Mansion*. Please send 50c for photocopy costs.

Travis Howell of 1a Eulinga Avenue, Aspendale, Vic 3195 can offer help in *Pool of Radiance, Curse of Azure Bonds, Secret of the Silver Blades, Buck Rogers, Gateway to Savage Frontier, Champions of Krynn, Death Knights of Krynn, Kron, Hunchback Adventure*, and *Liberty*. Also, if you send Travis a C64 diskette, he'll return it to you packed with a party of characters.

Matthew Armstrong of 11 Harcombe Street, Bell Post Hill, Geelong, Vic 3215 can offer full solutions for *Monkey Island* and *Indy Jones*, as well as hints for *Maniac Mansion, Hugos House of Horrors, Police Quest I, Kings Quest II, Zak McKracken*, and *Lemmings*. If you want the full solutions, send 50c for photocopies.

Rhonda Toms of 18 Alawoona Street, Redbank Plains, Qld 4301 can offer help in *Astrodus Affair, Seabase Delta, Grand Larceny*, and *ZZZZ*.

Lastly, a correction to an April clever contact. Heath Kirby Miller of RMB 221, Sunraysia Hwy, Stuart Hill, Vic 3478 can offer help in *Runaway*, and *Escape* for the C64, and *Cruise for a Corpse* and *Kings Quest V* for the Amiga.

(Heath would also like to acknowledge all the help he's received from Dorothy Millard of 12 Venetian Court, Croydon, Vic 3136 - a clever contact with help for hundreds of C64 adventures).

Mark Harris, the Clever Contact with a voice and a telephone, adds *Elvira 2, Black Crypt*, and *Might and Magic III* to his extensive list of adventure and roleplaying games for the Amiga. His phone number is (02) 369 4920. You can ring Mark between 8am and 11am during the day, and between 7.30pm and 10.30pm during the evening. No calls on weekends thank you.

A very big thank you to all the clever contacts for a doing a fantastic job.

Help, Help & more Help or the Smart Adventurers Dept.

Here are many solutions to many problems that have appeared recently in the Realm. Included are hints for *Cadaver, Labyrinth, Monkey Island, Fish, Knightmare, Search for the King, Hugo's House of Horrors*, and *Drakhhen*.

Peter Georges has come to the rescue of two troubled adventurers. First up was Martin Witchard who was stuck in *Cadaver*. To get the key to the last room of level three, take the chalice to the king, drop it on the font, then give the full chalice to the king. Get the key and go north. Drop through the pit in the centre of the room and go south then west. Insert the key into the keyhole and go west. Then climb the stairs to the fourth level.

Labyrinth

Then Selim Ramis wanted hints for *Labyrinth*. Pay no attention to Alph or Ralph. Go through the right door, then the left, then the right.

Before you can rescue Ludo you must get rid of the two guards. To do this you need to change the colour of the coloured squares to red. Do this by walking across them three times. You then have to get the guards to cross a red square. When both guards are gone, free Ludo by using one of the items you are carrying.

Ask the wise man how to get into his garden. He will recite a riddle. Give him a dollar and take the change and the rule book. Solve the riddle to find the exit.

To get into the castle of the goblin king, call Ludo, then call rocks, then throw rocks at the guards. To get out of the secret corridor, find the missing black key in the piano keyboard walls, and insert the plank (ex log). Now unlock the door. Call Ludo, call rocks, and call recorder. You have now made a rock video. To get out of the hedge maze, use the shears! (Found in the stone corridor).

Congratulate the wall to escape from the wall of hands. At the stone faces, throw insults. At the bog of eternal stench, use the leg to negotiate the bog. Call Ludo if the bridge is down. In the underground, drop the log when slasher appears ... phew!

Fish

Noel McAskill responds to a plea from Aaron Upcroft for *Fish* tips. After floating up through the trapdoor, open the bag to return to the tower. Bream's password is ME, and the computer is used by typing SIT DOWN, LOGIN, ROACH, ME commands and ending by QUIT and LOGOUT.

Peter Gillespie was stuck in *Knightmare* a few months back. Fortunately, Steven McKinlay of Doncaster (Vic) has helped out: To get inside the main dungeon you need the twig that was just inside one of the doors. With this go straight to the tree that says "I have lost my Child" and chuck it into the middle of the tree. If it works, the tree should leave a couple of wands which you can use. If it doesn't work, try again - aiming in the middle! You should be able to enter the first level of the adventure. If one of your players dies, you can put their heart into that tree near the start of the level to revive them!

Graeme Beaven of Wyong in NSW was stuck in *Search for the King*. He was stuck in the kings mansion. Mark Harris offered the following advice to keep Graeme moving: Go to the bedroom, go east to the wall, open the wardrobe, look inside, press button, wait, slide down pole, wait, release pole ...

Steven Williams was stuck in *Hugo's House of Horrors*. Aslan is not in a wardrobe. It refers to the book *The Lion, the Witch and the Wardrobe*. Aslan is a lion who inhabits a place called Narnia. The wardrobe bit refers to how the children of the book got there.

Matthew Armstrong has come to the rescue of Stuart George, who was stuck in *Monkey Island*. To find the combo on the safe, you must have already talked with Stan about buying a ship. Then go to the shop. Tell the shopkeeper you need credit and that you have a job. Watch how he opens the safe.

J.B. Poole was stuck in *Drakhhen* (a painfully complex game). Mark Harris came to the rescue with some quick answers. Firstly, castle Nakhthka is an Ice Palace. You must visit the Swordsmith/Blacksmith first. Secondly, to get into the Pyramid Castle, you must enter through the southern door (which is actually the door facing north. The paths, by the way, are east-west). Aim the third character from the left towards the lower side of the door. As for the dragon, you have to sneak past him. If you kill the wrong prince or princess, then completing the game could get quite hard. Make sure you read the gravestones!!

Realm's Adventure Swap

This is the part of the Realm where you can send me a list of your games that can longer be bought from anywhere retail wise, and you might get someone to swap their games for yours! It's a great way to catch up with some of those golden oldies!

First up on the ranks is Matthew Armstrong (see Clever Contacts for address). He has *Indy - The Adventure* to swap, and he is after *Zork I* or *Maniac Mansion*. He might even be willing to pay cash for the *Mansion* game.

Scott Walker of 6 Cordwell St, Balmain, NSW 2041 has been searching high and low for a game called *Dungeon Quest*. Scott has several older adventure games he is willing to swap, or he will also pay out for the games. Write to Scott for more info.

Andrew Malden (see clever contacts for address), would like *Monkey Island 1* or 2 and also *Loom*, for *Hugos House of Horrors* or *Zak McKracken*.

Ben Moore, of Lot 53, Douthie Rd Selville East Vic 3139 would like to swap *Sword of Aragon* and *Demon's Winter* for any good old games.

Problems, Problems & more Problems or the Troubled Adventurers Dept.

Rhonda Toms is stuck in a golden oldy. In *Zim Sala Bim*, what does she need to give to the villagers? Also, how does she get out of the dungeon? Rhonda would also like hints for *Treasure Island, Rigels Revenge, Escape, Cranmore Diamond, Aztec Tomb Revisited, The Detectives, Salvage*, and *Classic Adventure*. (Write to her at her clever contact address).

Brett Higgins of Cuprona in Tassie is stuck in *Dark Side*. He cannot seem to find the telepod crystal. Brett is also stuck in *The Immortal*. He cannot open the pit from level 2 down to level 3. Does he have to do something else after placing the gems? Is the pit in this room or does it open up in another room? Does the program have a bug?

Neil Fletcher of Richmond in NSW is stuck in *King Solomon's Mines Pt 1*. How does Neil get past the Zulu guard. Then a spider blocks him in the cave near the lagoon. As you can see, Neil is neck deep.

Michael Goodman of Carine in Western Australia is stuck in *Battletech*. He has got Jason and his team into the hidden spare mech parts base, and he has solved all the computer door codes. His problems are:

1) He cannot find two computer white codes.

2) He doesn't know what to do in the starry map room.

3) Where is Jason's father?

Robert Allen of Greensborough in Vic is stuck in a game called *Obitus*. In the catacombs there is an unknown warrior that Robert cannot kill. He is located at the end of the maze after the blue gem was placed on the wall. Whilst playing this game, a message appears saying "Zamen is the Key". Does this unknown warrior protect this key? What is this warrior protecting? Is it necessary to kill him? Many questions, hopefully someone can provide many answers for Robert.

Cheryl Galpin of Rye in Victoria is stuck in a game that sounds very arcade type. It's called *Tusker* (for the C64), and Cheryl wants to know how to get to level 3, as well as some hints on how to get though most of the levels. Any takers?

Lorinda Courtney of Lara in Victoria is stuck in *King Solomon's Mines*. She is stuck in the inner part of the skull cave. A snake wrapped around a box is really troubling her to the point of madness. Can anyone help Lorinda?

Michael Bathols of 75 Felspar St, Narrogin, 6312 in WA is still having problems in *Nine Princes of Amber*. He wants to know if there is a secret passage in the royal library, or does it have something to do with Julian entering the library? Also, could anyone tell Michael what the best method is of getting to the pattern in Amber and what to say to Julian after the fight at his first meeting. Write to Michael at the above address.

Games Update

June rolls around again and here with the June predictions are the boys at **Interlink**.

Here we go, here we go, here we go! **Player Manager II**, the sequel to the best soccer management game on the Amiga should be out around now. Featuring Player stress, multi-player options and a host of other features, it looks set to hold it's top of the league position.

Chalk your cue, here it is! The sequel to **Jimmy White's snooker**, and it's a pool game! Tentatively called **8-ball Pool** it should easily pocket the opposition.

Three new games from Sensible Software. There's **Wizkid** (The sequel to the classic **Wizball**), **Sensible Soccer** (looks set to rival **Kick Off 2** in the playability stakes) and **Cannon Fodder** (which should do for war games what **Mega-Lo-Mania** did for strategy)

Join the Lost Boys, fight Captain Hook and chase Tinkerbell around the room with Ocean's latest blockbuster license. **Hook** is looking and playing rather like **Secret of Monkey Island**; this (and the title) should virtually guarantee it being a great game.

Frank Herbert's **Dune** was an epic novel and the game looks the same with some very Gothic backgrounds and some stunning portraits. An interactive-strategy adventure due now.

Now **Railroad Tycoon** was a good example of what a strategy game should be like. **Civilisation** (by the same programmer) is better. It's bigger, bolder and brasher. It has more options than you can shake an oak tree at and it's due out very soon, if not already.

Chaos Engine, oh **Chaos Engine**, where is the brand newie from the Bitmaps? In developement it played like an arcade version of **Shadowlands**. Hopefully it will make up for **Magic Pockets**!!

Interlink - Games 'R' Us

Ciao from the Game Know-It-Alls.

The Dungeon by Kamikaze Andy

Regular readers will realise that Andy Phang has been out and about. In fact, over the last few months he has been filling us in on the recent Chicago CES. Here's his third and final installment ...

Right, we're into the final stretch now. Maintain course and warp factor, Mr Chekov. Here we go!

Readysoft, known for their graphically superior games like *Dragon's Lair* and *Space Ace*, previewed the (now released) *Space Ace II: Borf's Revenge*, and the soon to be shipped *Guy Spy*.

Space Ace II is a lot like its predecessor, so if you happened to like the original, then check this out. *Guy Spy* is a lot more intriguing, because it's the first Readysoft game not to be made by the Don Bluth group (which created the other Readysoft stuff, including *Space Ace II*) but featuring the graphical style used by Bluth. As such, the Readysoft representative declared that *Guy Spy* would not maintain a linear structure and that there would be more than one way to solve a particular puzzle.

As for the plot: You are Guy Spy, famous undercover agent trying to save the world from the evil clutches of ... evil people. So there. Check out the demo at your local Amiga store for more info.

Sequel to Bane

Sir-Tech's newest and boldest release is *Crusaders Of The Dark Savant*, the followup to *Bane Of The Cosmic Forge*. It will use 32 colour graphics (unlike 16 for *Bane*) and will feature outdoor scenes as well as the usual dungeons. The menu interface has been simplified, and a few extra options thrown in for good measure.

Depending on how (and if) you completed *Bane*, *Crusaders* will begin the game from four different starting points. One will be for those who have not played *Bane* or did not complete it, and the other three will follow on directly from the three possible endings in *Bane*.

More Might and Magic

Now that *Might And Magic III* has finally shipped (let's hope without the bugs found in the PC version), fans of this series will be pleased to know that the next scenario is due by the end of 1992. Using a similar system, it will continue the saga of Corak, Sheltem, and your band of interdimensional adventurers. Although this sequel (and others that follow) will have a playing area as large as M&MIII, it will not be called *Might And Magic IV*. Instead, New World has chosen to go with scenario names appropriate to each sequel, and so you'll be playing yet another chapter in the Might And Magic Series instead of *Might And Magic IV*.

Planet Edge (also from New World) has been delayed till late September. Demos of the game provoked mixed reactions. Some of the graphics were excellent, and some (on the different planets that you explore) were not so. It uses an overhead *Ultima*-style presentation when you explore terrain, but the characters were rather small and lacked detail. *Planet's Edge* will have 32 colour graphics and digitized sounds.

Spooks of both Kinds

Virgin Games had one of the best stands at the show, mainly because of the free food and drinks! Their products were pretty exciting, too. One, in particular, looked sensational. Called *Guest*, it's an interactive adventure through a spooky old house and it's only planned for CD-ROM at this stage. Hopefully, a CDTV version will emerge by the end of 1993 (the CD-ROM version is only due out in early 1993).

Other disk based products available soon for the Amiga included *Dune* (which turned out to be more strategy than role playing, though it features a surprisingly large amount of interaction with NPCs) and *Legacy Of The Necromancer* (an RPG with variable statistics as part of its contribution to the evolution of this genre). Both games featured excellent graphics, especially *Dune*.

Virgin also displayed *KGB*, a new graphics adventure that places you as a KGB Agent, trying to infiltrate the ranks of the hard liners and uncover sources of corruption within the system. Click on any object on the screen to bring up a menu listing the possible actions you can perform with that object. *KGB* is a murder mystery that will bring up different twists and turns as the plot unfolds. A reference to "the threat" to Gorbachev is even used in ads promoting the game!

Electronic Arts had two Amiga products on display (well, they also had *Populous II*). The first is a great looking icon adventure called *The Lost Files Of Sherlock Holmes*. It uses a system similar to Lucasfilm's *Indy And The Last Crusade*, and good old Watson will be on hand to record all your conversations and clues, so there's no need to write anything down. A large onscreen map makes travelling from one spot to another a cinch. Holmes will be strumming his violin for your pleasure by the end of the year.

The Black Crypt is perhaps EA's first real attempt at using the Amiga's full potential since ... oh, I don't know when. It's a role playing game which employs 64 colours in extra halfbrite mode, and includes extremely realistic dungeons, colourful and detailed beasts, a rather intriguing plotline, and what appears to be a very able interface. (See the review in last month's ACAR.)

Sierra's putting out new adventures by the truckload, with *Police Quest III* and *Conquests Of The Longbow* recently shipping to retailers. Expect the sequels to *Codename: Iceman*, and *Colonel's Bequest* (subtitled Dagger Of Amon-Ra, set around a mysterious Egyptian exhibit in a New York Museum). *Quest For Glory III: Wages Of War* has a release date of December 1992, and look out for *Willy Beamish II*! The kid and the frog are back!

That's it from Chicago - next month, it's back to good ol' Oz! See you then.

Realm Review:

Monkey Island 2: LeChuck's Revenge

Guybrush is back! Along with his bad jokes, silly remarks and tongue twisters in what has to be the major adventure release of 1992 - *Monkey Island 2: LeChuck's Revenge.*

The adventure continues on Scabb Island, with Guybrush telling his story of how he kicked Pirate LeChuck's behind in the original *Monkey Island* adventure for the umpteenth time to some very bored pirates.

"Haven't you got any new stories?" they ask, to which Guybrush points out that the reason why he is on Scabb Island is to star in a new adventure to find the Big Whoop, supposedly a treasure of gigantic proportions.

Well, this isn't exactly true, because there is no treasure on Scabb Island ("Everyone knows that!"). The real reason Guybrush is on Scabb Island is because he cannot leave! The island's evil dictator Largo has set laws preventing ships leaving the island. The only way Guybrush can leave the island in search for the Big Whoop is to get rid of Largo via a magic voodoo doll, the ingredients for which are scattered throughout the island. So begins ... Part One: The Largo Embargo.

This first part of the game is fairly straightforward, just to get you into the feel for the adventure. The problems should not trouble the experienced adventurer. There are many characters to meet including familiar faces from the past. You'll have a hilarious (and seemingly non-stop) conversation with a carpenter about chucking a wood chuck, then there is the little wimpy chartographer (just hang around and listen to him after you steal his eyepiece!) Then there are the unpleasant but also hilarious encounters with Largo.

Using the voodoo doll on Largo only makes life harder for Guybrush. Largo, in a fit of anger, brings the evil pirate LeChuck from the dead, and he's out for revenge. Things aren't all bad. Guybrush gets reunited with Governor Elaine, his sweetheart from the previous adventure.

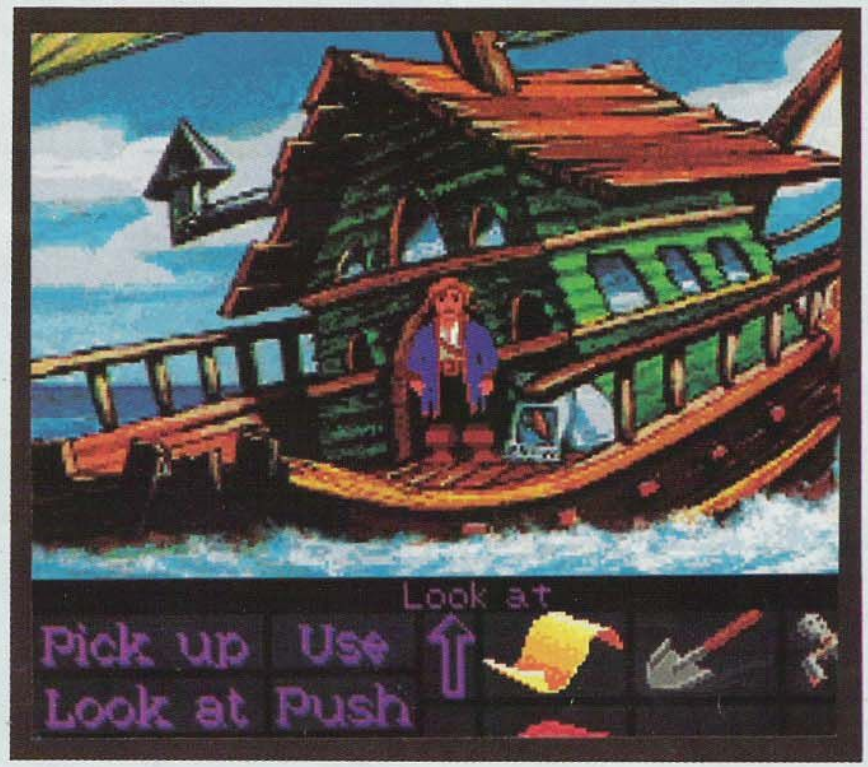
Those guys at Lucasfilm have refined the game control method to the best you could get on these modern day mouse driven adventures. You have to point to one of the nine verbs available (give, pick up, use, open, look at, push, close, talk to, and pull), then to something on the screen or in your inventory to construct a sentence command. It is impossible to construct an invalid sentence.

The game is easy to play and easy to learn. I can safely say that the interface used easily outshines the nearest rival, Sierra's point'n'click method.

The graphics are colourful (32 colour, actually) and fully animated. As Guybrush walks, the screen scrolls smoothly along with him. The attention to detail is also quite good, as is use of colour. Sound is also excellent, with the background music changing according to the situation you are in, adding much to the overall atmosphere of the game. The story runs like an animated comedy movie.

But alas, friends, the game is kinda crude in some spots. Not Larry sort of crude but more yucky sort of crude. For example saliva plays an important part in this game, as does rat stew! All of the crude bits are depicted in living colour. All hilarious, of course, but be warned!

Guybrush is a most likable character who will certainly grow on you, and don't be surprised if you hear Guybrush



"phrases" in everyday life, as they are quite catchy.

A nice little feature of the game is the "easy mode" which is the same game with the harder problems already solved. Perfect for the beginner who gets easily deterred.

Another feature that increases playability 100% is that it is very hard to die, or get stuck in a no-win situation. You won't be punished for being inventive or curious, and this is something I wish all adventure games would incorporate (take note Sierra!).

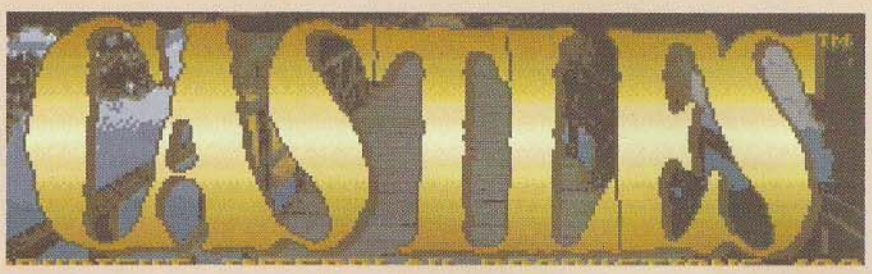
You'll be rolling in laughter after one session of *Monkey Island 2*, I can guarantee that. The game is so silly, all you can do is laugh! Overall, this is a fantastic achievement for Lucasfilm Games. It will no doubt be selling by the truckload even by the time you read this. It has already shot to the top of the charts in the PC market. If you buy this game, you will not be disappointed.

Distributed by Ozisoft (02) 313 6444. For the Amiga RRP $79.95.

Hints and Tips for Monkey Island 2: LeChuck's Revenge

Here are some tips to get you through part one:

- Need some money? Polish a peg leg, and don't stop until he's skint.
- To get lots of money, get yourself a job.
- You might make a good chef, though you have to create a vacancy first.
- Stewed rat will quickly tarnish a career.
- If you can't get near the snappy pet, cut it free.
- Check out food bowls.
- You need string, a stick, and something cheesy to catch the rat in the box.
- Did you know Largo wears a wig?
- Use some blank paper to collect some saliva from the bar.
- Need a shovel to dig a grave? The signs are there ...



What happens when you mix a little Sim City with a dash of Defender of the Crown, add a touch of Populous, and stir? Mark Harris finds out, in this quick visit to Merrie Englande.

With *Castles* you can design the layout of your own medieval castle. You'll need to pick a good site that's easily defendable from attack and then decide where to put towers, walls and doors. What kind of gatehouse should you build? How high should the battlements be? How hard should you make the peasants work and how much should they be taxed? Dare you get involved in quarrels between the Church and State? Should you respond to pleas for help from neighbouring Barons, leaving your own walls exposed to sieges?

As Lord and Lady of the realm you'll be able to make life and death decisions over your fiefdom, and burden over-taxed peasants with tyrannical demands. You'll also defend your castles in bloody battles, engage in brutal treachery and make scores of enemies. In this game you are placed on the throne of the Kingdom of Albion, and must build your castle amidst political unrest, unfriendly neighbours and war on two of your borders.

Castle construction is carried out in the design window. When building a castle, make sure you've got a suitable mix of workers to do the job. You'll also need money, to pay for the supplies and labourers. This money comes from taxation, the rate depending on the difficulty setting.

Another important aspect of the game

is defence - if you can't defend a castle there's no sense in building it. You're in hostile territory, so raise an army quickly or suffer the consequences. One of the most common tactics of an enemy is the siege. In order to withstand a siege, you must purchase an emergency supply of food so your army doesn't starve.

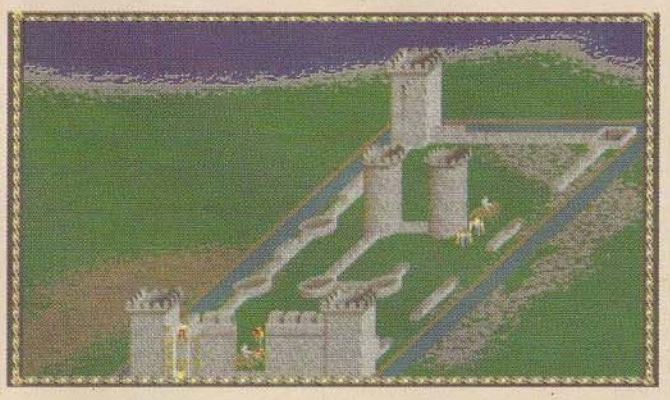
Messengers are received and they come from a variety of sources; noble families, the Holy Church, the princes of Gwynedd, the peasants, or the King of Bretagne. Your responses to the messenger sequences will determine your style of rule. How will you deal with the problem of poachers? A friendly word of warning? Or ruthless action? Decide carefully. If the problem is not handled properly it becomes a drain on your meagre resources later in the game.

You'll need one megabyte of Ram to run *Castles*. The interface is excellent and is mouse/keyboard driven. It's another IBM conversion, but luckily it has converted well - the graphics are fair, though the sound is boring (just turn it off). The gameplay, however, is addictive.

Set aside plenty of time to explore the richness of this program. The "One Castle Campaign" is ideal if you want a quick game, but there's plenty of depth. The eight castle campaign should be left till you have had plenty of practice. You can play from floppy and hard disk (for hard drive you will need 1.5 megabytes of disk space free, plus approximately 10 kilobytes of space for saved games). If you are a fan of Sim City and Sim Earth this game will interest you, but it's also recommended for beginners.

Distributed by Electronics Arts/Interplay. RRP Amiga $69.95.

Ratings	
Graphics	75%
Sound	65%
GAMEPLAY	85%
Value	75%
Overall	75%



SPECIAL FORCES

Microprose have done it again. Action, strategy, adventure - you name it, the Special Forces have got it. We sent Juris Graney on a quick tour of duty.

ACAR STAR

Special Forces is a strategic action-packed simulation of a modern elite rapid deployment combat force. You control a platoon of eight hand picked soldiers as they are sent to secure trouble spots around the globe. Their brief? Go in, secure objectives, and get out as quickly and efficiently as possible.

Each mission involves up to four team members. It is impossible for you to have control of every man, so squad members perform their own tasks to the best of their ability, while you can take direct control at any critical time. But you're also issuing and utilising each member's personal resources. This is reality, and your most powerful weapon is your brain. Tactics spell the difference between victory and defeat. You're the "guiding spirit" of the Special Forces mission troop.

When you get home and open the box, you'll find a relatively thick manual, three disks and a Technical Supplement sheet. The first of the three disks is an intro disk. The graphics are smashing. A helicopter flies through three scenes of a brilliantly drawn forest. It stops, and four men come abseiling from an open door. They hit the ground and split off.

If you want to get straight to the action, skip the Intro disk and head for Disk A. Before starting you will have to create a Roster Disk. After selecting your difficulty level, you then have to select your mission from one of four different climatic regions.

Then it's time to procede to the Team Members screen. Choose four men, give them codenames, and then equip them for the mission. Each man has a range of special skills. Choose wisely. Now we move to the Equipment screen. Load your guys with Grenades, L.T.D's, Sterling Machine Guns, Browning pistols, LAW Rockets, Explosives and more. Then it's off for the the real fun.

A helicopter will drop your men at pre-set drop-points and then it's up to you. You will now have to scale the mission down, find your objective by looking at the Scaled Terrain Map and looking for a circle. Then you have to decide your tactics.

Will you go on in and slaughter everyone, or stealthily move up, taking cover at every tree? Will you use special tactics like Line-Of-Sight, using cover, "Pop-Up" or - my favourite - Diversions? Each can be successful if executed correctly. Using diversions, for example, is a matter of detonating explosives as a decoy. All the enemy troops head for the point of the explosion, leaving their posts unguarded, giving you easy access to your objective.

If you complete your mission, you can go back to your drop point and get the helicopter - if rescuing a hostage, simply get close to him and press ESC. This will get the helicopter and pick you and your hostage up. Some missions are carried out at night. If so, you're equipped with the best night vision equipment that American dollars can buy - no expense spared.

Special Forces is the sequel to the classic *Airborne Ranger*. The graphics are very good, the sound is excellent and the gameplay is brilliant. *Special Forces* is an exciting combination of action, strategy, danger and suspense which will push your decision-making skills and reflexes to the limit. Don't miss it!

Distributed by Questor (02) 662 7944. RRP Amiga $79.95.

Ratings:	
Graphics:	85%
Sound / FX:	87%
Lastability:	93%
Addictiveness:	94%
Overall:	92%

Like to change a little history? Greg Munro shows you how as he takes part in the ...

Charge of the Light Brigade

Half a league, half a league,
Half a league onward,
All in the valley of Death,
Rode the six hundred ...

Everyone knows Alfred Lord Tennyson's poem about a minor incident in a long forgotten battle of the Crimean War. Balaclava, October 25th, 1854. 607 British light cavalry rode up the wrong valley at the wrong time, straight into the history books and the mouths of 30 Russian canon! 198 made it back. (The not-so-famous Heavy Brigade chose to stay alive by not following, thus ensuring their historical oblivion.)

Now the tragedy and glory of Balaclava comes to the small screen, courtesy of Impressions, a software group specialising in period wargaming. Another of their games, *Great Napoleonic Battles*, is a faithful copy on computer of traditional hex-map games, but *Charge of the Light Brigade* is different.

Charge is not written as a board game copy, but as a computer game in its own right. Historical accuracy is maintained, the same traditional wargaming rules are used to resolve engagements, but *Charge* makes more use of moving graphics and sound, and there isn't a hex in sight.

Unlike *Napoleonic Battles, Light Brigade* is almost entirely mouse and icon driven. Graphics are reasonably good, but obviously not Amiga written, and sound FX are rather basic, betraying their IBM origin.

Battles are resolved in "real" time. The action during "battle mode" gives you a feel for the chaos and uncertainty of a large battle. You begin to understand the dilemma of generals, making split second decisions as enemy hordes descend inexorably from the hills! Fortunately, you have a little more time to think. Giving orders is a bit like American Football. The action is frozen while you decide what to do, then recommences when you're ready with your next play.

You can view the entire battle on a map where units are shown as flags, or zoom in to view one part of the conflict in greater detail, with each unit represented by a small figure. Every unit has its own description and number. Each has five attributes: attack strength, defence strength, missile power, morale, and numbers.

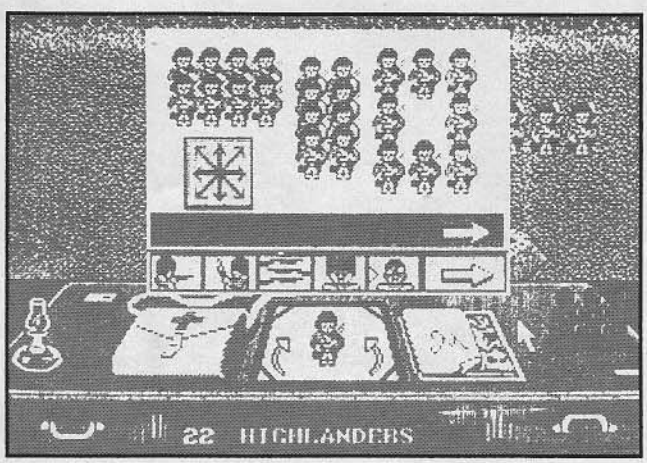
You command units individually, or in groups. They can march, run or charge in five different formations, towards whatever target or spot on the map you designate. Infantry and Artillery can also fire at remote targets. There are 14 troop types, such as Highlanders, Hussars, Dragoons, Artillery, Turkish Infantry, Cossacks, etc. You view dozens of unit figures jostling and charging on screen to the noisy tumult of battle sounds. When you realise that each represents 100 infantry (or 50 cavalry), you can begin to imagine the chaotic terror of war.

Terrain is taken into account when movement and battle results are calculated. Units on higher ground have increased attack and defence capabilities. In battle, units can be victorious, retreat, be routed, or get wiped out. Routed units hightail it off the battlefield, but may be rallied if they encounter enough friendly units. Units with low morale and strength can be combined.

Charge of the Light Brigade is an interesting and historically accurate simulation. There is scope for variation in play. You can play either side, with human or computer opponent. You vary the difficulty by choosing the level of realism. Commands to remoter units may be either immediate or delayed. You can choose to be able to see only the battle area nearest your troops, and to have enemy troop strength details hidden. Set to 'TRADITIONAL', the computer generals will act like their real-life namesakes, but 'NEW' lets them think for themselves.

There are some annoying features, like the rather chaotic scrolling method for viewing the battle. Graphics are nothing special, but overall the game is challenging and addictive. The British held Balaclava against all odds (despite the Light Brigade's folly!), but emulating that feat in this game will require a lot of strategic skill and provide hours of frustrating fun to any wargamer.

Distributed by DirectSoft (02) 489 7853. RRP $79.95.



Ratings:

Graphics:	65
Sound:	55
Instructions:	80
Playability:	85
Addictiveness:	90

Space Crusade

Yet another RPG comes rolling off the production line, and Juris Graney is just the man to check it out. Is it anything out of the ordinary? Read his comments and find out.

More than 25 millennia ago mankind took the first tentative steps to the stars. With the discovery of the warp drive came the Great Expansion. What was once a journey of several centuries became a journey of several days.

For those uneducated people out there, Warp space is the parallel universe into which starships may jump, travelling hundreds of thousands of light years in a few hours. Warp space is also the domain of Chaos. In Warp space nothing can be taken for granted. It's a universe filled with cross-currents, eddies and whirlpools of power. Ships have disappeared without reason, and emerged from the Warp centuries after they entered it, millions of light years from their intended destination. These derelict starships, distorted beyond all recognotion, are known as space hulks.

During the Great Expansion man reached ever further into the stars. In time of the hidden power of the Warp came to be noticed. By entering Warp space man had awoken an ancient evil: the minions of Chaos had escaped the Warp. The first great war, known only as the Age of Strife, had begun.

Space Crusade is a science fiction role playing game, in which you control a commander and four marines. Your commander starts off as a Sergeant, and can work his way through the ranks. The computer version (formerly a board game) allows for three players, each commanding one marine chapter each, The alien is played by the computer.

If you do well you'll be promoted until you reach the exalted rank of Captain Senioris, or, if you manage to accomplish each of the primary missions, you will become Captain Supremus. You will also be awarded honour badges if you do well in a game.

At the start of the game, the marine players choose the marine chapter they wish to represent, the weapons for their marine team, the mission to be played and the equipment packs and orders for their marine team. The marine players must attempt to accomplish the mission they have selected from the mission list. Simply, move in, kill aliens, achieve mission objectives, and move out.

Space Crusade was produced by the same people who made *Hero Quest*. The graphic are good, the sound effects are brilliant, but it lacks addictiveness. In my mind it is too hard to get into. Too many options ruin a game and all the options ruin this. With a 34 page manual to read before play, you can't just jump in and kill aliens.

Weapons, though, are good. Assault cannons, plasma guns and power axes are just a few. To win the game, you have to outpoint all the other commanders - not an easy task.

The screen isn't cluttered with junk and the scrolling is smooth and easy on the eyes. There are 12 missions in all. The first - Seek and Destroy - is easy enough. All you have to do is seek and destroy the dreadnought aboard alien vessel 653. The aliens have blocked some corridors with rubble. Clear rubble with weapon hit of one or above. The primary mission will be awarded to the player who destroys the dreadnought.

The last mission as you can guess is the hardest. In this you have to destroy the tube of Chaos. Simple enough huh?

Space Crusade is for the die hard board game fans. If you liked *Hero Quest*, you'll love *Space Crusade*.

Distributed by Mindscape (02) 899 2277. RRP Amiga $69.95.

Ratings:	
Graphics:	86%
Sound / FX	89%
Lastability:	76%
Addictiveness:	65%
Overall:	75%

HOME ALONe

What sort of game can you make out of the highest grossing comedy movie of all time? Phil Campbell finds out.

When is the last time the Campbells went to the movies? I can hardly remember. Like most people these days, we're a video house; we wait for the movies to come to us.

HOME ALONE - or "HOME ALONe", to be typographically correct - is our all-time family favourite. Eight year old Kevin has been left at home. In the early morning rush for the airport, his parents didn't notice that Kevin had slept in. Now they're in France, and Kevin is home alone, doing his best to foil the efforts of a pair of would-be burglars. Gripping stuff, with all the makings of a nifty computer game.

And here it is. In fact, Electronic Arts have just released two software packages based on the movie; *Home Alone - The Computer Game*, and *Home Alone, The Computerised Colouring Book*. I passed both of them on to my junior reviewing team for an expert assessment.

Nathan, aged eight, took an immediate liking to the computer game. The action occurs in two phases. In part 1, you run from room to room looking for items that you can use to defend yourself. It's a race against the clock to pick up and relocate as many items as you can - balance the bowling ball above the door, arrange glass christmas tree ornaments under the windows, and hook the heating element over the doorknob.

The time limit is tough - the house is huge and highly detailed, and there are 26 potential weapons. So far, Nathan has managed to find and set up 23.

In phase 2, the burglars break into the house. Harry and Marv can be seen in a small display at the top of the screen - they stumble as your traps are activated, and you gain points. The action gets hotter when they arrive in the room where you're hiding - move fast, or they'll have you for breakfast.

It's a pretty simple idea, and in execution it's competent rather than brilliant. But Nathan is engrossed. "The heater you put on the door knob and the tarantula in the bedroom are just like in the movie," he says. "It's fun."

The *Home Alone Computerised Colouring Book* appealed to Nathan's younger sisters Johanna (6) and Madeleine (4). There's a large selection of line drawings, with varying degrees of complexity. Colouring the pictures is simple - there's a palette at the bottom of the screen with variable colours. Simply point at the colour you want in the palette, click with the mouse, then click on the area you want to colour. As easy as 1-2-3, and both girls were at work in moments.

Maddie chose a simple picture of Kevin hiding under the bed, while Jo started work on a more complex picture of the outside of the house. "I like it because you can choose all the colours and fiddle around and get them right," says Jo as she re-paints the gutters.

The *Home Alone* computer game and colouring book probably won't set the world on fire - in fact, to my adult eye, they could use a little more polish. The kids, however, are having a great time re-living their favourite movie.

Distributed by Electronic Arts (075) 911 388. RRP *Home Alone* $59.95 & *Home Alone Colouring Book* $39.95.

David Sanna hasn't yet got his driving licence, but he's practising hard with the latest in Mindscape's 4-D Simulation series ...

4D Sports Driving

Where the 4th dimension is REALISM. So says the advertisement. Exciting stuff, so let's strap ourselves in behind the wheel.

The first thing that hits you is the electric music which peps you up for things to come. And you can see in a flash, you're dealing with a real "simulation", and not just some "Off the arcade pinni revival." *4D Sports Driving* is a true simulation of the world's dearest, fastest and most lusted after cars.

After a small intro sequence, it's time to select your car, your opponent, and your track. Then you can set your options, adjusting graphic detail and other features. I began this review on the day of the Indy Car Grand Prix so the obvious choice of car was the Chevy Indy. Next, an opponent - choose from such characters as Bernie Rubber, Helen Wheels, Cherry Chassis and Smokin Jo, I chose the expert, Skid Vicious - the fastest and most experienced dude on the circuit. The car I chose for him was a Porche 929. Slower than the Indy, but hey, I want to win!

I select the "Let's Drive" icon and the race is under way. A screech of tyres and we're off. I soon speed away from my Porsche counterpart and begin to navigate the track. Up and over a jump, through a loop the loop, around a corner leading into a long straight. Good! Now I can make some serious distance between me and Skid.

There's a lane leading off to my right but I decide not to take it and keep going faster, over another jump and through a corkscrew. Whew! It's like a rollercoaster ride around a dividing wall - very tricky at 170mph. I'm about to pass through an intersection ... when Skid roars past me in his Porsche. "You &$#*$^!." I cursed. "RIGHT!! THAT'S IT! Now I'm really MAD!" My tyres squeal around a chicane as I take the banked turn into another straight. Head to head we fly over a huge jump. Did I see him wave? Boom. We hit the track and he takes off - I'm right behind him. Entering a tubular tunnel I try to cut around behind him -and suddenly notice the concrete barrier in front of me.

Whew! I jerk the wheel, turning into the curved tunnel walls at an incredible angle. So incredible, in fact, that I loop the tunnel seven times before hitting the exit. "WWOOOOOWW!" I breathed, as sweat rains from my armpits, down my arm, onto my fingers and onto the joystick.

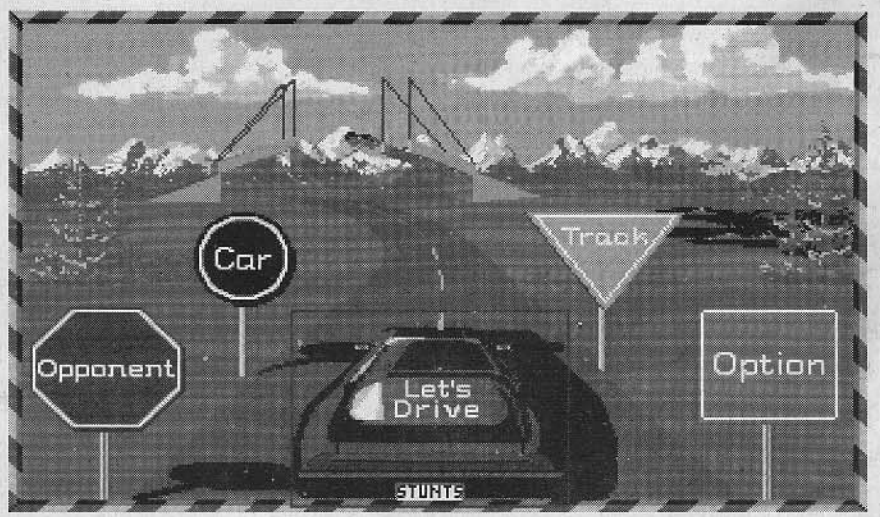
On a divided highway now, I take the left lane and he takes the right ahead of me. I accelerate to 160mph. 170. 180. Suddenly the highway stops and I slide into an ice covered chicane, spinning endlessly down the track. Quickly recovering - I'm getting good at this - I bear down on the Porsche with the finish line visible in the distance. Getting closer, closer. Almost there. The line is nearer. I'm level ... this will be close ... and VOOOM! We hit the line at almost the same time. We wait for the official results ... and ... YES! YES! YEEESSSSSS! I WON! YIPPY!

Boy. What more can I say. *4D Sports Racing* is exciting stuff. Graphics are filled polygon style - not spectacular, but they fill the bill perfectly. The music, as I said before, is excellent, though other sound effects are only average.

Overall, *4D Sports Racing* is a very worthwhile addition to your racing collection. It's fast, with good gameplay - and you can even build your own tracks, complete with stunts. What more would you want?

Distributed by Mindscape (02) 899 2277. RRP Amiga $59.95.

Ratings	
Graphics	75%
Gameplay	81%
Lastability	79%
Sound	73%



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